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WORDSTAR: THE REBIRTH

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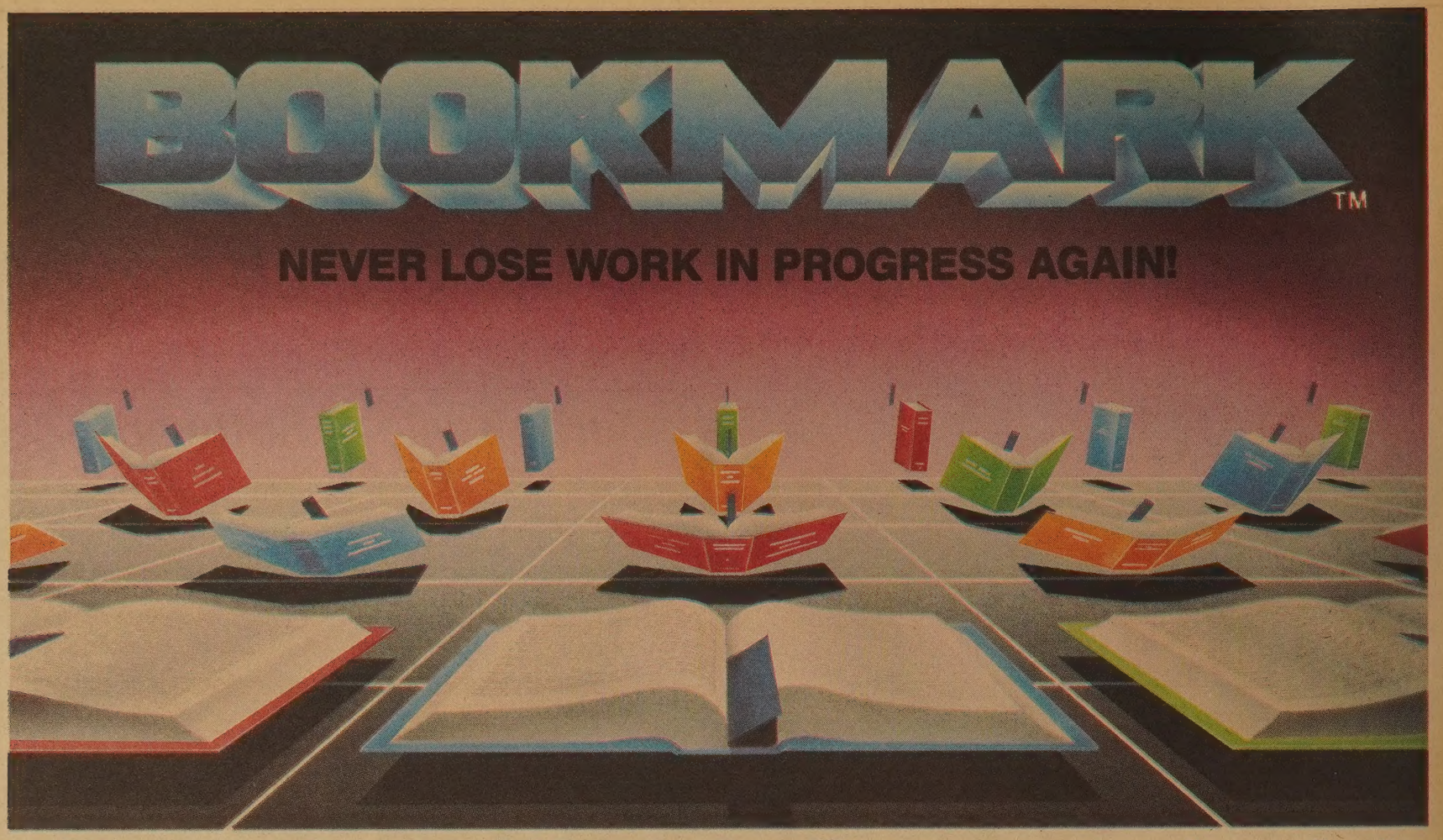

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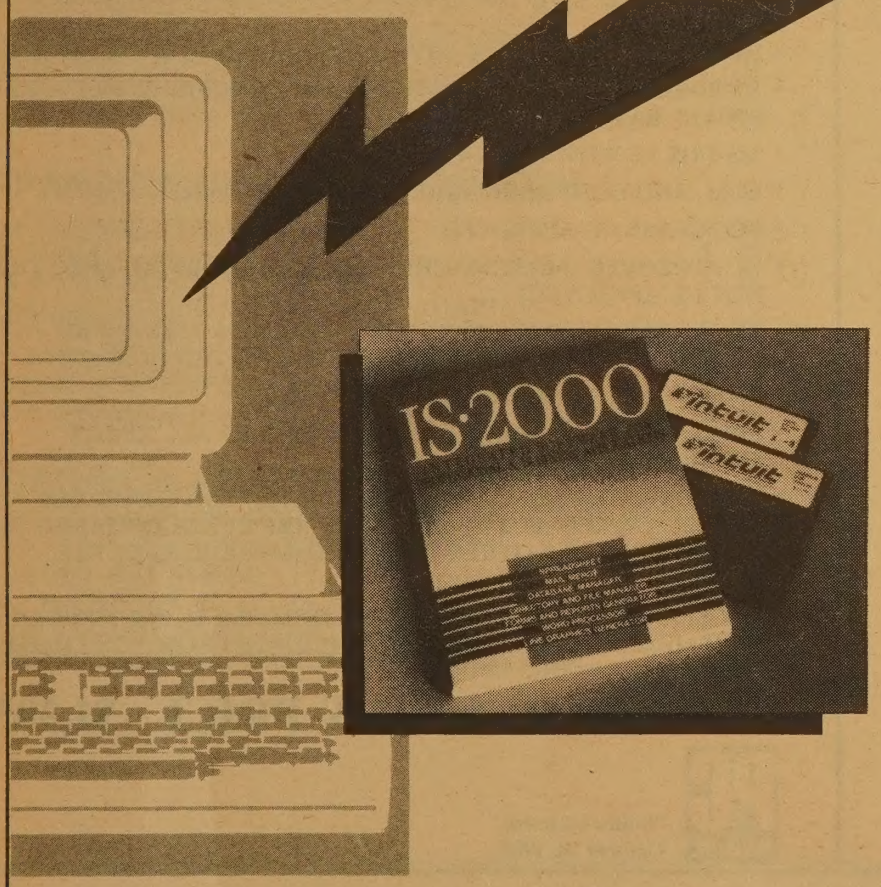
Orchid	Turbo 286	PC/XT	YES	8	595
Maynard	Surprise	PC/XT	NO	9.54	249
Microspeed	Fast 88	PC/XT	NO	6.1/6.7/7.4	149

TurboKwik +



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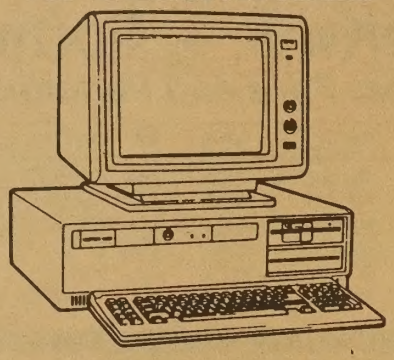

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☐ INTRODUCTORY PRICE $2,425.

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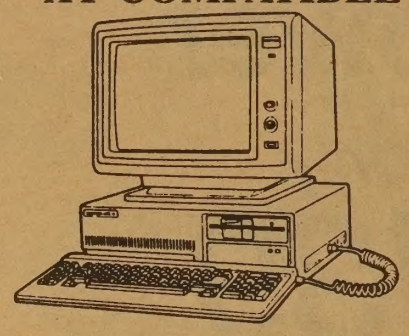

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PC MAGAZINE "Editor's Choice" October 14, 1986

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Note: The Powerhouse VPC II comes with 640K RAM and a 12" Amber Monitor, and is an upgraded version of the VICTOR VPC II which was editor's choice in the October 1986 issue of PC Magazine.

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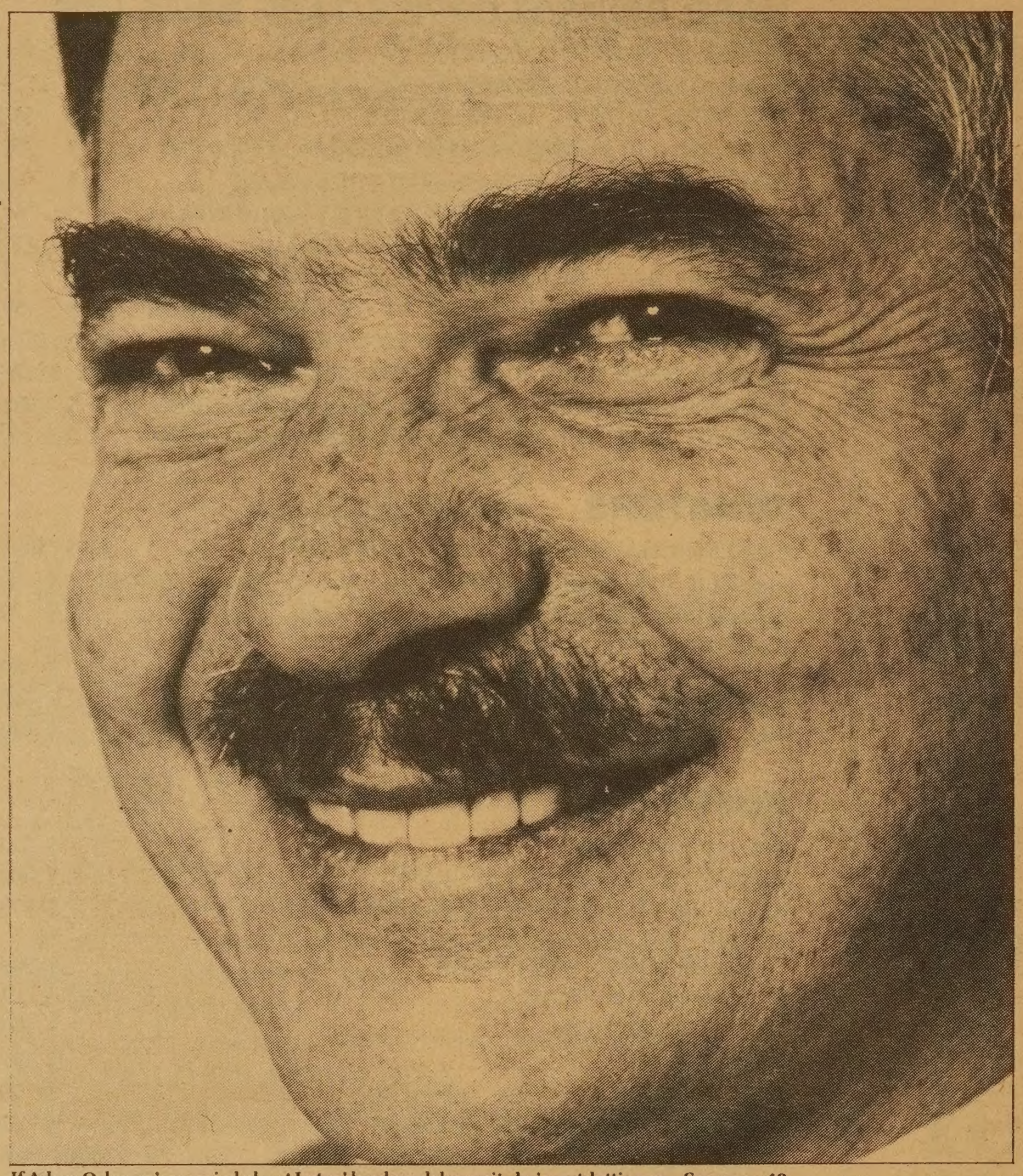
ISSUE NO. 30 APRIL 1987
MICROTIMES

COVER STORY

Cover and contents photos: Marc Franklin



If Adam Osborne's worried about Lotus' landmark lawsuit, he's not letting on. See page 48.

48 Osborne On Software

By Mary Eisenhart

The always-outspoken Adam Osborne, whose Paperback Software is currently embroiled in a legal dispute with Lotus over the controversial "look and feel" issue, holds forth on industry standards, copy protection, lawyers, and the rewards and pitfalls of the software industry.

COLUMNS

92 CP/M
By Robert D. Athey Jr.
With new users snapping up used CP/M machines at bargain prices, then needing instruction, you may find a perfect niche for setting up your own consulting business. Here are some useful pointers.

94 PC Systems
By Ken Milburn
Why PC compatibles and *Ventura Publisher* are the right desktop publishing system for most corporate offices — now.

98 UNIX
By Bennett Falk
An impressive new UNIX environment for your PC.

100 Atari ST
By Helmi Kobler
Aegis Animator, a great new graphics animation package, plus news about impending software releases from leading publishers.

102 DOS Solutions
By Wayne A. Yacco
More hints for tailoring the user interface to your needs.

104 Data Base Management
By Warren Sirota
Indexing with *dBase* relations — tips for greater efficiency and accuracy, and advice on pitfalls to avoid.

106 Telecommunications
By Brock N. Meeks
Further developments afoot in the federal government, and how they affect the average telecommunicator.

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By Matthew Leeds
Amiga in the video arena, *Murder* on the 64.

FEATURES

46 Cloneware: Smart Software For Clone Users
By Pamela Monroe
A new software company offers versatile financial planning and desk accessory software — for clone users and the incidental IBM diehard.

60 The New Macs: Power And Flexibility
By Robert Beauchamp
A look at Apple's newly unveiled machines — the powerful Macintosh SE, with limited expansion capability, and the open-architecture, color-optional, 68020-based Macintosh II. Also, related third party products.

65 War Of The Windowing Software: DESQview Vs. Windows
By Birrell Walsh
In which our intrepid correspondent compares the two leading multitasking/windowing packages for the DOS world, from the standpoint of long-term product positioning, users' reports, and personal experience.

HANDS ON

70 WordStar: The Rebirth
By Ed Kahn
To quote the author: "If you never liked *WordStar*, you probably won't like it now. If you were hoping that the new version would make it a different product, you're out of luck. But if you like *WordStar*, but wished it could do some of the things the competition does, this could be your dream come true."

76 Special Section: 12th West Coast Computer Faire
Coming to San Francisco's Moscone Center March 26, this year's Faire offers an unusually diverse assortment of informative conferences, helpful product demonstrations and bargain prices. Use this special preview section to plan your agenda.

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Is litigation taking the place of innovation in the software industry?.

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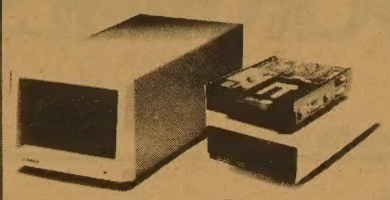
TAPE BACKUP



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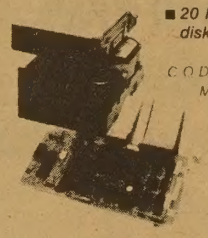

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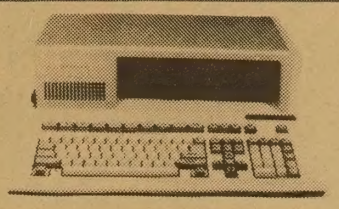

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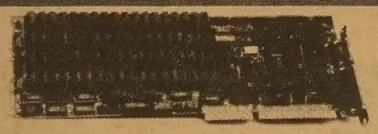

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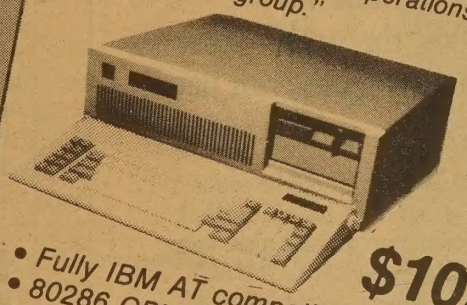
Stan Miastkowski
Byte, March 1987



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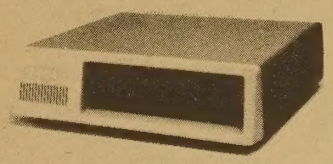

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• slimline, 3 long and 1 short slots	70W

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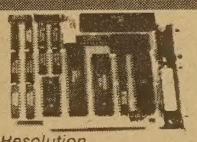

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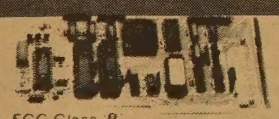

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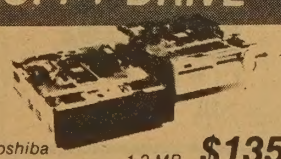

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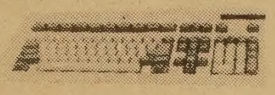

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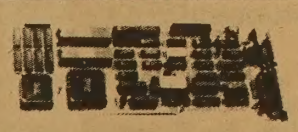

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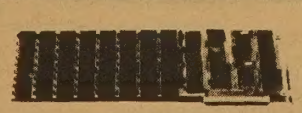

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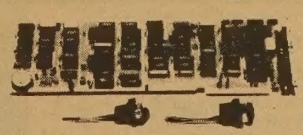

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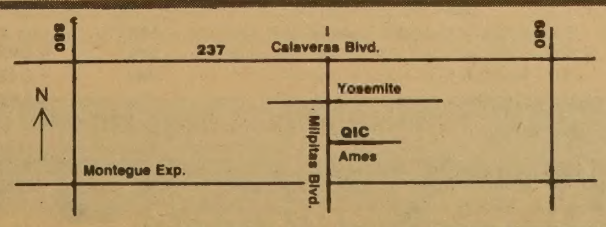

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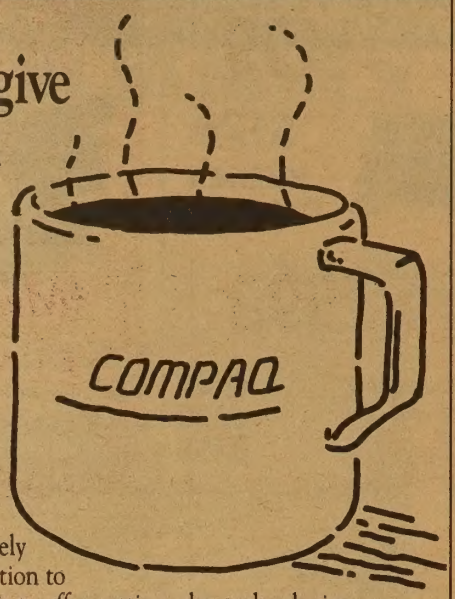

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CONTRIBUTING PHOTOGRAPHERS Marc Franklin, Ken James, Pat Johnson, Ann Summa

EDITORIAL CONSULTANTS Don Hamilton, Pat Hamilton

DESIGN

ART DIRECTOR Lee Ann Nelson
ASSISTANT ART DIRECTOR Laura Reese
DESIGN ASSOCIATE Karen Cholodenko
ART STAFF Mary Angela Collins, Tim Levin, Lisa Lusk, Ruth Petersen, Susan Whipple, Angela Williams
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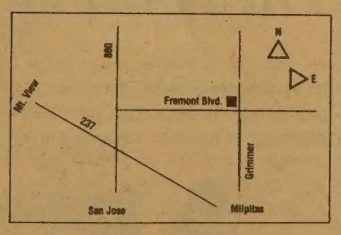

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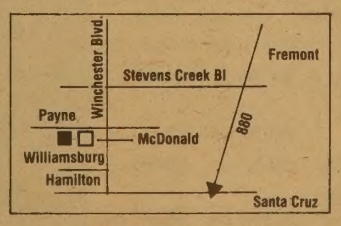

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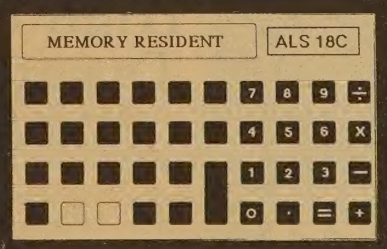

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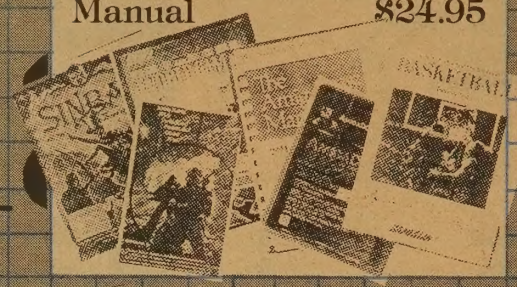

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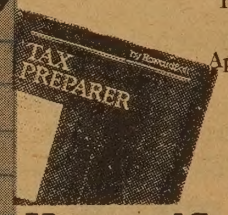

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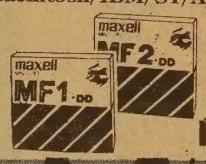

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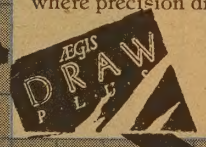

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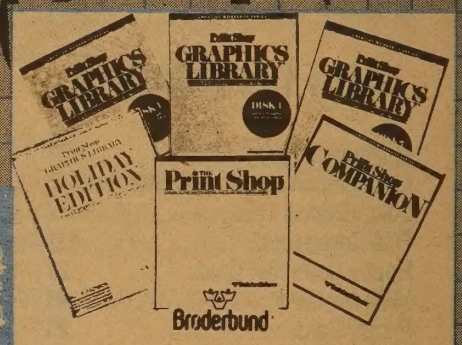

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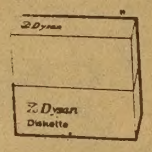

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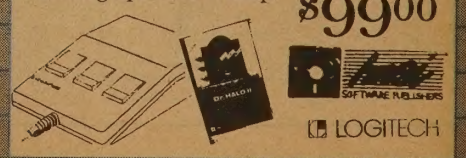

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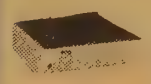

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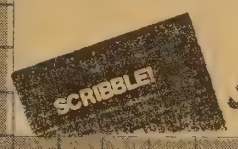

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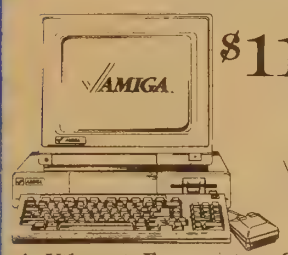

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From Innovation To Litigation

Future news item: Ford Motor Company is suing General Motors over infringement of its driver interface. Ford lawyers claim that Henry Ford established the standard "clutch on the left, gas on the right, and brake in the middle" configuration on the Model T and that this pattern has been copied by the defendant without Ford's consent. A Ford spokesman says, "It's our gestalt."

Emulation may be the sincerest form of flattery, but current legal jockeying over look and feel says a lot about the future of the micro industry. Concepts are so vague that lawyers will be billing into the 1990s. (Imagine explaining to a jury the "gestalt" of one trash can icon over another!)

This conflict is a natural stage for a maturing industry. As garage-sized companies grow to megabuck bureaucracies, innovation is supplemented by litigation. Sure, improve the product, but for just a small investment in legal services, you can gain market share by scaring the competition.

For shareholders, issues are the same whether the product is a soft drink or toothpaste. After all, the company paid to develop the product and continues to pay to advertise and support it. Software is its intellectual property and the look and feel of screens is as identifiable as any trademark.

For example, Apple is determined to maintain its lead in desktop publishing. So if the company can stop or slow products from being ported to IBM, it can maintain its lead, not on the basis of quality, but on exclusivity. (You can almost hear the lawyers cry, "NeXT!") From Lotus's view, Paperback Software is nothing but a cream skimmer. Lotus did all the work and built the market. If the *VP-Planner* did not look and act like *1-2-3*, it would be far less salable.

Not only do these arguments add nothing for users, but they could actually raise prices by eliminating competition. Underlying these moves is a sense of family personality. The common user interface between Apple IIGS and Macintosh or the unifying Lotus interface to its numerous products is easy to identify. As I have said many times before, there are real benefits to "You already know how to use it" — even if the interface is a little clumsy. If the companies win their exclusivity (or bully the competitors with fear of costly legal entanglements) they also take on the responsibility to refine and improve. Of course, that can be a two-edged sword. In the long run (and that can be a long time), a company that demands rights to the look and feel, also gets the responsibilities: if the Lotus personality falls behind the power curve, the company will be so strongly identified with the interface that it too will fall behind.

If companies like Apple and Lotus win their exclusivity (or bully their competitors with fear of costly legal entanglements) they also take on the responsibility to refine and improve.

But the negatives of the move from innovation to litigation are very strong. Without doubt, threat of legal action will stifle competition. Even in-house application developers are concerned about rights to products their company funded internally. Apple seems determined to control icon-derivative products, and this could weaken its position with third-party developers. The goodwill and free flow of ideas that built this industry could crash against legal restrictions and doubts.

Issues of intellectual property and copyright protection have always been difficult. Few support stealing another's work for profit. But right or wrong, when lawyers are called in, everyone's costs go up. Marginal companies will back off and investors will be gun shy. Raising the ante is a well-established way to attack competition — but I prefer attacking competition with better products, not more expensive lawyers. And that may be the ultimate reason to reject the "look and feel" arguments: the micro industry grows by doing it better, doing it faster, selling it cheaper, and making it available to everyone. I'd hate to see that change to "Sue the bastards!" □

Video Creates A New Kind Of User

I will confess to becoming a little jaded. I can still be impressed by the speed of a 386 PC or the new low, low clone prices — impressed but not excited. But the two graphics products, from Dan Silva and Arthur Abraham (*Deluxe Paint II* and *Amiga Live!*), are exciting: exciting visually; exciting as a market; and exciting for the future they promise.

As an industry matures, the pieces begin to fall into place that enable new products to multiply the effects of one another and create a new class of user.

The natural affinity the TV generation has for graphics, makes the merger of personal computers and video inevitable. PCs have been designed more for text and calculation than for handling high-resolution graphics. Video frame-grabbers have been either very slow or expensive. Tools to manipulate bit map images (particularly color) have been esoteric and complex. But with the introduction of the Amiga (despite Commodore's skimpy support) and the Apple IIGS, the basic graphics engines are cheap and fast. A-Squared's *Amiga Live!* pumps video images into memory and manipulates them in real time, while Silva's *Deluxe Paint II* delivers a box full of bit map tools customized to each machine. (And watching Silva play *Deluxe Paint* on the Amiga is like listening to Itzhak Perlman play a Stradivarius.)

The ability to combine real life images from video with computer control over contrast, color, shape, and time suggests many applications. After seeing a demo of *Amiga Live!* a golfer talks about using freeze-frame to analyze his golf swing; a retailer envisions building a video catalogue; a home video producer imagines the low cost, high impact special effects — desktop MTV. Artists see unlimited opportunities to play with color and motion, while desktop publishers can capture graphics not possible with a flatbed scanner. And it's a new way for millions to use TV.

Just as the personal computer expanded the number of users, the video computer invites a whole new class of user.

Desktop video is the view from the personal computer — but computer integration and control over the television and its peripherals is the view from the home. For better and for worse, the world spends a good deal of time in front of the TV — just watching. These new tools make possible interaction: freeze and replay, frame by frame, a football pass interception, then print out the crucial instant; bring up a spreadsheet to balance the checkbook during the commercials; switch in the nursery camera to check on the baby; build a video game based on tonight's six o'clock news.

This diversity and enthusiasm makes me look forward to the possibilities. Video is truly the lingua franca of communications, and the impact will be multiplied by the data-handling and telecommunications power of the PC. So the video computer (intelligent TV? PCTV?) seems a natural, since all the major TV manufacturers already build PCs.

The creation of the video computer corrects a shortcoming of PCs that has been discussed in this column many times before: PCs come to you empty — you have to fill them with information and that turns users into typists. The cost of entry with graphics is even higher. But video fills the memory with images ready for the user to crop, color, add, annotate, subtract, delete, rotate, duplicate and manipulate.

Just as the personal computer expanded the number of users, the video computer invites a whole new class of user. Graphics is changing the demographics of computer usage, raising the visual ante.

So the battleground for the next generation of computer user is, in fact, television. And if your computer looks like TV, and your TV's as smart as your computer, you fly First Class. Just like the commercial. □

Jan Lewis is a well-known industry analyst and president of the Palo Alto Research Group, a consulting firm for the microcomputer industry. This article has been reprinted with permission from Computer Insider, *PARG's newsletter.*

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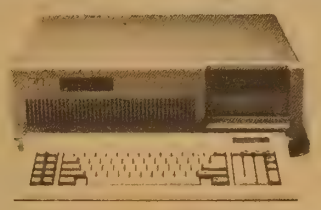

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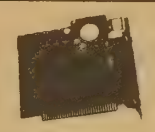

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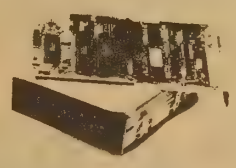

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March 24 "The Alternative: Computerized Property Management and Accounting System." Seminar. No charge, preregistration required. Call (415) 641-0850 for registration information.

March 25 Twelfth Annual Pro-Comm Awards Ceremony. Santa Clara Convention Center. Sponsored by Business/Professional Advertising Association. For reservations and information, call (408) 554-9187.

March 25-28 Software Publishers Association—Spring Symposium. Claremont Hotel, Berkeley. Call (202) 452-1600 or (415) 346-8786 for information.

March 26-29 West Coast Computer Faire. Moscone Center, San Francisco. Call The Interface Group, (714) 476-2300, (415) 364-4294 for information.

March 28 Computer Swap. Santa Clara Country fairgrounds. Contact Computer Swap America, P.O. Box 620107, Woodside, CA 94062, (415) 366-9162, for information.

March 30-April 1 Data Cartridge Technology Conference. Los Angeles. Call (818) 906-9962 for information.

March 31-June 9 Advanced dBASE. Class, taught by the author of dBASE III: Things The Manual Didn't Tell You. Vista College, Berkeley. Call (415) 841-8431 for information.

April 7-28 Desktop Publishing Class. Computer Arts Institute, Corte Madera. Call (415) 924-6955 for information.

April 9 PC Desktop Publishing Seminar. San Jose. Sponsored by AMAX Engineering Corporation. Call (408) 262-6888 for information.

April 11 Computer Swap. The Concourse, San Francisco. Call Computer Swap, (800) 252-SWAP for information.

April 11-12 Computer Supermarket Show and Sale. Santa Clara Convention Center. Call Microshows, (800) 433-7469, (415) 340-9113 for information.

April 18 Computer Swap. Santa Clara County Fairgrounds, San Jose. Call Computer Swap, (800) 252-SWAP for information.

April 25 Computer Swap. The Concourse, San Francisco. Call Computer Swap, (800) 252-SWAP for information.

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As a community service, MicroTimes lists trade shows, seminars, and other special events in the Calendar of Events free of charge on a space-available basis. To improve the likelihood of your listing's timely inclusion, please make sure we have the necessary information no later than the first of the month two months before the cover date of the issue in which you'd like it to appear (i.e. the deadline for the December issue , on the street in November, is October 1). Send to: MicroTimes Calendar of Events, 5951 Canning St., Oakland, CA 94609.

News about user group meetings and other regularly scheduled activities should be sent to User Group Network at the same address.

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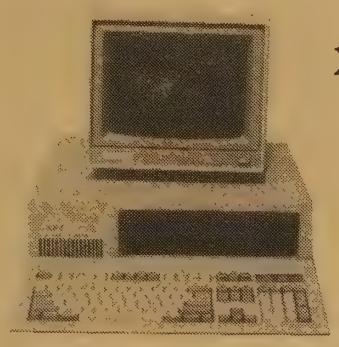

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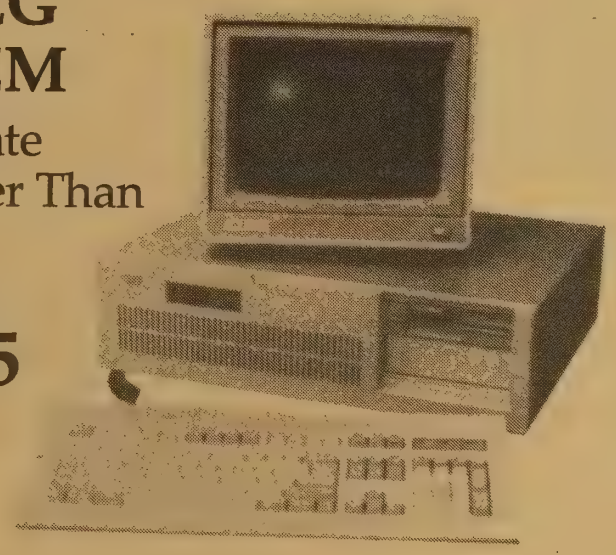

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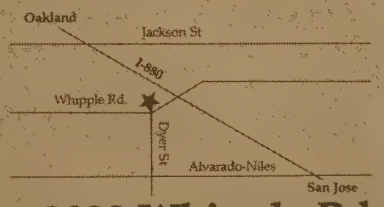

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Industry News

By Hartley Lesser and Patricia Lesser

Founder Levy Leaves Activision

Activision, Inc. (Mountain View, CA) has announced the resignation of James Levy, the company's CEO and president as well as founder. Bruce Davis has been named as his successor.

Apple News

Apple has announced the *Apple K-12 Curriculum Software Reference Guide for Science*. This is the first in a series of guides designed to help primary and secondary educators find the best software for their curriculum.

Apple will also make a donation of $250,000 to the Children's Discovery Museum of San Jose, CA. The money will support the creation of one of the museum's major exhibits, "Around the World Travel."

Sidekick With Commodore PCs

Borland International (Scotts Valley, CA) has reached an agreement with Commodore to bundle Borland's *Sidekick* desktop organizer with both of Commodore's newly introduced IBM PC compatible computers. This bundle is immediately available.

Datacopy Drops Prices, Bundles SuperPaint

Datacopy Corp. (Mountain View, CA) has reduced prices on its scanners and software products. The JetReader pagefeed scanner is now priced at $1,300; the Model 730 flatbed scanner is now $1,800. The software will be available individually as options and in kits which include software, host interface hardware, cables and manuals. Image processing kits for both the IBM and Mac computers are available from $595, and the OCR IBM kit is $895.

The company has also announced that it will be including *SuperPaint* painting and drawing software from Silicon Beach Software with the MacImage scanning and image processing systems.

Video Marketing From EA

Electronic Arts (San Mateo, CA) has introduced EA-TV, a VHS video cartridge that provides the viewer with a synopsis of all Electronic Arts software products scheduled to be released between now and the end of April, 1987. The products demo'd in the latest EA-TV are: *Return To Atlantis, HMS Pegasus, DeluxePaint II, Earl Weaver Baseball,* and *Dan Dare: Pilot Of The Future.*

Litigation In Lotus-Land

Lotus Development Corp. (Cambridge, MA) has filed suit against Paperback Software (Berkeley, CA) and Mosaic Software (Cambridge, MA), charging both with copyright infringement, false advertising and unfair trade practices. At issue are Paperback's *VP-Planner* and Mosaic's *The Twin* spreadsheet packages, both *Lotus 1-2-3* compatible. The suits were filed in the US District Court in Boston, MA, and seek injunctive relief and damages.

Mindscape Acquired

Mindscape, Inc. (Northbrook, IL) has been acquired by a newly formed corporation owned by John Purcell, chairman of Mindscape, and Roger Buoy, its president and CEO. Previously, the company was a subsidiary of SFN Companies, Inc.

Mitsubishi/Apple Interactive Marketing

Mitsubishi Motors (Fountain Valley, CA) and Apple Computer have joined forces and will tour America. The show will travel to over 100 regional malls across the country, permitting mall shoppers to choose options on a new car by personal computer. The computer pavilion will encourage mall shoppers to use one of six Apple IIc computers for an interactive color graphics program. Shoppers get to "build" their ideal Mitsubishi, choosing everything from color to transmission type. When this construction is completed the shopper receives a personalized printout similar to a dealer window sticker from the Apple ImageWriter II printer.

Symantec Acquires Breakthrough

Symantec Corp. (Cupertino, CA) has acquired Breakthrough Software (Novato, CA), the developer of the *Time Line* project management software program. Under the terms of this agreement, Breakthrough will be run as a division of Symantec, and the *Time Line* product series will continue to be sold under the Breakthrough name.

Turner Hall To Publish Cambridge Software

Turner Hall Publishing (Cupertino, CA) has announced plans to publish Cambridge Software Collaborative's *Spreadsheet Analyst, Macro Analyzer,* and *Spreadsheet Comparator.* Cambridge Software Collaborative was acquired by Synex International, the developer of Turner Hall Publishing's *SQZ!*, in December of last year. CSC's products will now be published and marketed by Turner Hall Publishing.

Hartley and Patricia Lesser are veterans of computer publishing, having published over 500 feature articles and reviews in computer magazines worldwide and assisted in founding four national computer publications, including inCider. *They have also worked at* PC World, *Softalk Publishing, and several other publications, and founded two online computing magazines,* MicroToday *and* Corporate Computing. *They currently publish and edit* Computing Today! *a weekly computer magazine on the GEnie personal network and the NewsNet business network. They can be reached at (415) 828-1528.*

Apple Unveils AppleShare

Apple Computer (408/996-1010) has introduced *AppleShare*, a workgroup file server software package that extends the personal computing environment to a workgroup effort. AppleShare is designed for use by small companies, departments within larger firms, and university faculty and administrators. The server software is configured with a dedicated Mac Plus computer and a hard disk drive. As many as 25 users can access information from anywhere on an AppleTalk network as if it were resident on their own Macs. *AppleShare* is the first product to incorporate Apple's published standards for the AppleTalk Filing Protocol (AFP). ($799)

The AppleShare file server configuration is simple and flexible, using a dedicated Mac and hard disk as a file server.

Using the AppleTalk PC card, IBM PCs and Macs can be linked on the same AppleTalk network.

Apple also announced communications products to expand the Macintosh concept into workgroups and integrate and enhance information from other computing environments:

The **AppleTalk PC Card** permits MS-DOS PCs to share information on the Apple network and access Apple's LaserWriter.

The **AppleLine 3270 File Transfer,** a software utility for transferring files between the IBM 3270 mainframe and Macintosh via Apple's 3270 protocol converter AppleLine.

Datavue 20 Meg

WEST COAST COMPUTER FAIRE SHOW SPECIAL!

Computer Tyme Slashes Prices On Datavue Portable Computers!

The popular IBM-compatible is on sale!

The savings have never been bigger! Computer Tyme is slashing prices on the popular IBM-compatible, portable Datavue computer. Save 40%, 60%, and more on these models:

Datavue with 20M internal hard drive, one 3½″ disk drive, 768K RAM, amber gaslit display, serial, parallel, RGB, and color composite ports ..... Was $3495 **Now just $1995**

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With fluorescent backlit display ..... Was $1995 **Now just $899**

Datavue with 5¼″ floppy drive, 768K RAM, LCD Display, serial, parallel, RGB, composite ports ..... Was $1995 **Now just $699**

With fluorescent backlit display ..... Was $1995 **Now just $899**

With amber gaslit display ..... Was $2245 **Now just $1199**

Come by Booth # 1542 and Save!

DATAVUE™

An Intelligent Systems Company

Apple DCA (Document Content Architecture) Filer is a utility that translates documents from popular MS-DOS word processing applications to and from MacWrite.

In related news, the following companies and their attendant product lines have announced support for AFP:

3Com Corporation (415/961-9602) with an Apple Mac version of its 3+ network operating system

Alisa Systems (Pasadena, CA) also plans to support The Apple Communications Framework, including AppleShare File Server protocols, in the next release of its file server for VAX/VMS. The Alisa file server is part of the AlisaTalk package currently marketed by Alisa Systems to DEC VAX owners who wish to use their VAX superminis on the AppleTalk network.

AST Research, Inc. (714/863-1333) with support of the AppleShare file server software with its ASTK-4000 hard disk subsystem.

Blyth Software (415/571-0222) has announced a multiuser version of *Omnis 3 Plus* compatible with AppleShare file server software. The new AppleShare version supports the Apple Communications Framework and allows multiple Appleshare users to simultaneously access the same *Omnis 3 Plus* database applications. The product should be available in the first quarter of 1987. Other networks on which *Omnis 3 Plus* is supported include OmniNet, Sunol, HyperNet, Keeper Plus, EtherMac, MacServe and TOPS.

Centram (415/549-5900) with the introduction of *TOPS Repeater* and *TOPS Star*, two products to increase the size and length of an AppleTalk bus network. *TOPS Repeater* extends the length of the AppleTalk network by overcoming the AppleTalk bus restriction of a maximum length of 1,000 feet. This product receives incoming network signals, regenerates them, and then re-transmits them at full voltage. *TOPS Star* transforms bus networks into star topology. ($189 and $1,500, respectively). Centram has also announced that *TOPS* and *TOPS Print* now support the Apple Communications Framework. Centram products also work on the AppleTalk PC Card and are compatible with AppleShare file server products.

Corvus Systems, Inc. (408/559-7000) has announced a new product for its Omninet LAN that provides full support for AFP and will provide full support for AppleShare.

Diversified I/O, Inc. (408/730-2171) has introduced *SoftBackup*, a standalone software product that backs up files to tapes or diskettes and supports the Apple Communications Framework. *SoftBackup* enables a user to store information to a tape or diskette drive directly connected to his or her Mac, or to a tape drive connected to the AppleShare file server. *SoftBackup* permits AppleTalk network users to share the cost of popular SCSI tape drives. ($69.95 for standalone, $139.95 for AppleTalk version)

Du Pont (302/992-5212) has designed and introduced a fiber optic LAN for AppleTalk that allows fiber optic replacement or extension of the standard copper wire twisted-pair cabling system. The Du Pont fiber optic LAN is modular and consists of a shielded cable assembly linking each computer or peripheral with an electrical/optical signal converter, into which an optical cable is terminated. One hundred stations, or more, with each as much as 4,900 feet apart, can be linked, depending upon system traffic.

Farallon Computing (415/849-2331) has made additions to the PhoneNET product line that support the Apple Communications Framework and the AppleTalk network. The StarController makes it possible for AppleTalk networks to be wired in a star topology; the StarController Management Option allows a network manager to monitor network status; The PhoneNET-AppleTalk Repeater allows network cable length to be extended several miles; PhoneNET Plus Connectors support higher network speeds; PhoneNET TrafficWatch software is a comprehensive set of network analysis and debugging utilities.

Forethought, Inc. (408/737-7070) announced that *FileMaker Plus* will support AppleShare. ($295)

Great Plains Software (701/281-055) introduced *The Network Manager*, a product that supports ACF and allows the company's Accounting Series for the Mac to run as multi-user software utilizing the AppleShare file server. ($395 for the Manager, $695 for the accounting software)

Infosphere, Inc. (503/226-3515) has announced ComServe, the first modem server for AppleTalk networks, which also provides terminal communications to Mac LANs. ($195)

InterSuivi (514/481-4874) offers *Management by Commitment* to run on Mac LANs, including a set of effective management tools, an interactive coaching module, and comprehensive support material.

Layered Software (617/423-9041) supports the AppleShare File Server and AppleTalk with a version of its *Insight Accounting Series* being fully compatible with this new communications capability.

Letraset USA's (201/845-6100) *Ready,Set,Go!* now supports the AppleShare file server system and also works with several third party offerings, such as TOPS and MacServe.

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Tatung is one of the world's largest manufacturer's of color monitors. In fact, we've already produced over 2,000,000. Tatung also makes a full line of computers and peripherals. Our reputation for superb quality is known around the world. And we deliver complete after sales service to you.
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Model Resolution
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COMPUTER
• TCS-7000
PC/AT Compatible
TERMINAL
• TVT-7220
DEC VT 220
Compatible
• TVT-7261
ANSI-ASCII Terminal
Emulates:
* IBM 3101 MOD 881
* DEC VT
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Once upon a time, America led the world in innovation, quality, engineering, and manufacturing with names like Edison, Ford, and Bell...

Once Again America returns:

$755
Basic system

PRICE...QUALITY...PERFORMANCE

The CLUB 286 is manufactured and serviced only in the U.S.A.
As proof of their commitment to quality and performance, CLUB AT Inc. is offering same day shipping, integration of the most up-to-date Intel parts, and 48 hour burn-in.

"If Imitation is the sincerest form of flattery, the CLUB AT pays the IBM AT a heartfelt compliment. The only failing of the (CLUB AT) is that it imitates the IBM machine to accurately; ...and you can't beat that..."

Karl Koessel **PC World** December 1986

"The CLUB AT's Low Price and Blazing Speed..."

Joe Desposito **PC Magazine** October 28, 1986

Basic system 8 MHZ CPU with option A $1075

Basic system 10 MHZ CPU with option A $1125

Option A: 1.2MB Floppy Drive
WD HD/Floppy Controller

Features:

- MAXI switch keyboard/Pro™ keyboard
- 6/8/10 MHz, selectable with 8 MHz CPU
- 10 MHz option available
- 1MB of inboard memory (with 512K standard)
- 8 I/O expansion slots
- 195 watt power supply, 110V/220V switchable
- Fully compatible high speed AMI BIOS, (written in U.S.A.)
- Full documentation, operation manual with binder
- Full one year warranty

Dealers and Corporate inquiries are welcome

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CLUB-286

AUTO CAD
RUNS Xenix™
NOVELL NETWORK
MULTI TASKING

AMERICAN MADE QUALITY
IMMEDIATE DELIVERY

$755 Basic system

PROUDLY MADE IN THE U.S.A.
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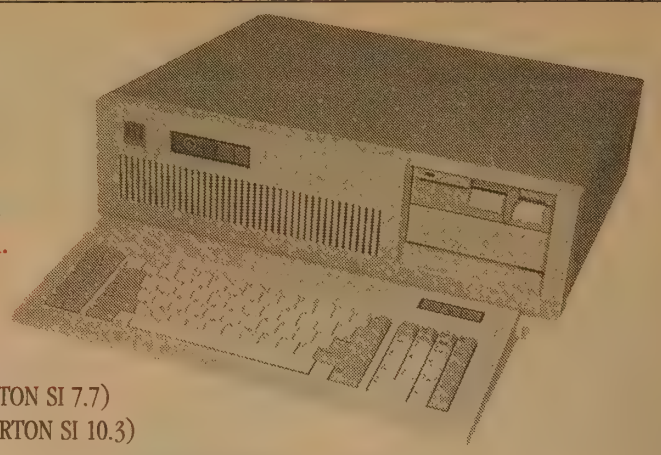
SERVICED IN U.S.A.
Extended Warranty Available



Option A: 1.2MB Floppy Drive
WD HD/Floppy Controller
* MAXI switch keyboard/Pro™ keyboard
* Free Set-Up utility
* 48 Hours Burn-in
* 195W Power Supply
* 33% faster than IBM AT
* 512K RAM, expands to 1 MB
* 6/8/10 MHZ, 8 MHZ CPU Chip
* Full 200 page documentation and Reference Manual
* Clock/Calendar with Battery Backup
* W.D. Hard Disk controller
* Fully Compatible High Speed AMI BIOS, written in U.S.A.

Basic system 8 MHZ CPU with option A $1075 (NORTON SI 7.7)
Basic system 10 MHZ CPU with option A $1125 (NORTON SI 10.3)

FREE
Fully configured and tested for your system requirements

- ☐ With 20MB Seagate 65MS 1/2 Ht. $355
- ☐ With 20MB Seagate 39MS Full Ht. $549
- ☐ DOS 3.1 $85
- ☐ 80287-8 8MHZ $225

Made in U.S.A.

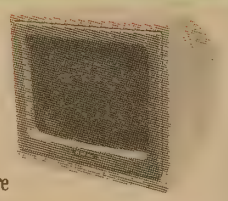
One Year Limited Warranty
Dealers and Corporate qty. Discounts available

CLUB 286 Mono system
* Basic system as described above plus Monochrome Display card and IBM quality Monochrome monitor **$1309**

CLUB 286 Color system
* High quality
* Basic System as above
* Plus color Display card and color monitor
* Fully Assembly and tested, no installation required **$1500**

CLUB 286 Color EGA system **$1740**

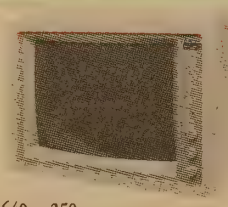
MONO MONITOR



* Nonglare
* 12" screen
* 800 x 350 resolution **$138**
* FCC class 'B' approval

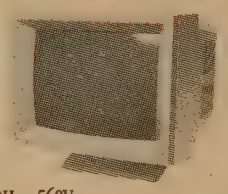
IBM Quality Color Monitor $345

EGA MONITOR



* 640 x 350
* 640 x 200
* EGA and CGA **$480**
* FCC class 'B' approval

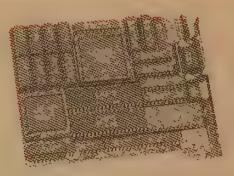
NEC MULTISYNC



* 800H x 560V
* Test Mode Switch
* No Installation required **CALL**
* EGA, PGA, CGA compatible

MICRO EGA

Club Micro EGA

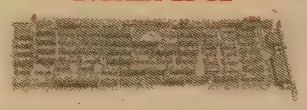


Made in U.S.A.

* External Switch
* 640 x 350 EGA
* 320 x 200 CGA
* 640 x 350 monochrome **$238**
* FCC class 'B' approval

UNIVERSAL DISPLAY

EVEREX EDGE



* Parallel Port **$248**
* 132 columns text, color or mono
* Mono Display Hercules Compatible
* FCC class 'B' approval
* One Year Limited Warranty

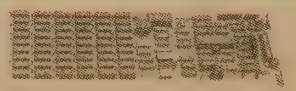
HERCULES COMPATIBLE

132 Columns

* Printer Port **$99**
* Software Switchable
* Monochrome Graphics
* Runs Lotus 123 Graphics
* Run 132 x 44 column display
* Comply with FCC class 'B'

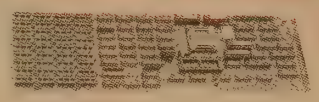
Made in U.S.A.

6-PAC COMPATIBLE



Club 384 (for PC)
* Serial Port **$88**
* Parallel Port
* 0-384K Memory
* Clock/Calendar
* FCC class 'B' approved
* Game Port and software

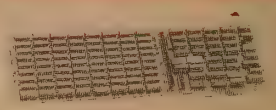
ACCELERATOR



* Accelerate Your PC/XT to AT Speed
* 80286 CPU
* w/128K RAM **$399**
* Runs 80287 math-processor in 5MHZ or 8MHZ speed
* Runs 7 times faster than PC or 33% faster than the IBM AT

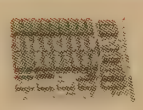
CLUB EMS

INTEL ABOVE-BOARD COMPATIBLE



* Works in PC/XT/AT **$109**
* 0-2MB Capacity
* Fits in LIM/SIM-EMS
* Expanded Memory Specs
* Made in U.S.A.
* Lotus Intel compatible

MEMORY CARD



Made in U.S.A.

Club 576 (for PC/XT, and Portable)
* Software
* Short Card **$55**
* 0-576K Memory
* Supports 64K/256K DRAM

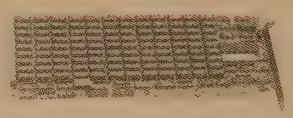
Made in U.S.A.

I/O FOR PC/XT/AT

* Software
* Parallel Port
* Half size card **$75**
* Real time clock/calendar
* Bracket for XT version only
* 2 Serial ports (2nd optional)

Made in U.S.A.

MEMORY CARD FOR AT

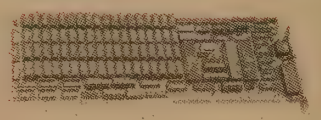


* No Piggy back **Club 3000**
* 0-3MB capacity
* 64K/156K RAM chips **$155**
* Supports split memory addressing
* One Year Limited Warranty
* FCC Class 'B' approval **CLUB 2500**

Made in U.S.A. **$138**

MULTIFUNCTION CARD FOR AT

Manager's Choice



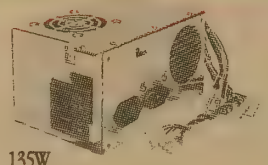
* Game port
* 0-2MB memory
* Runs at 12 MHZ **$179**
* 128K Increment range
* 1 Serial port (2nd optional)
* Self Installing software

Club 2000
12MHZ AT-Multifunction
Made in U.S.A.

FLOPPY DISK DRIVE

* 360K
* Half height **$95**
* TEAC/FUJITSU
* Double density
* IBM grey color extra

XT POWER SUPPLY

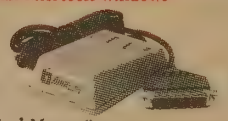


* 135W
* Reliable
* Complies with FCC **$83**
* Direct replacement
* One Year Limited Warranty

AT power supply $120

OPTICAL MOUSE

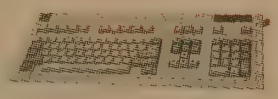
Microsoft Compatible
Run Microsoft windows



Optical Mouse Systems Mouse with DR. HALO
* 200 Dots/inch **$119**
* Work with Auto-Cad
* 3 Buttons/built in Microprocessor

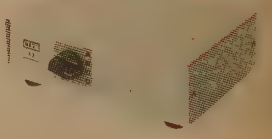
Mechanical Mouse $75

PRO KEYBOARD



Model no. 5151 **$88**
* Separate Numeric & Curser keypad
* AT Style Keyboard w/LED

SWITCH MASTER

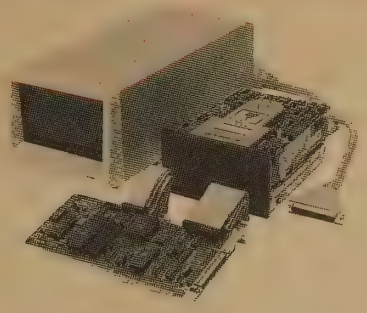


$88
* Cable included
* Share one printer by 4 computers or 1 computer to 4 printers

FAST HARD DISK FOR PC/XT AND COMPATIBLE

Upgrade Your PC/XT
Power Your XT

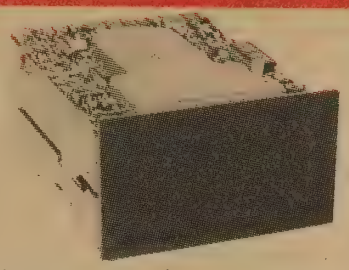
39 ms Access time



* Auto Head Park
* Boot from Hard disk
* Quality Seagate drive
* 39 ms average access time
* Software and Manual included
* Special Western Digital controller

	INTERNAL	EXTERNAL
☐ 20MB Hard Disk Subsystem Seagate 4026	$659	$759
☐ 30MB Hard Disk Subsystem Seagate 4038	$759	$859
☐ 40MB Hard Disk Subsystem Seagate (available now)	$859	$959

FAST HARD DISK DRIVE FOR AT



39 ms Access time

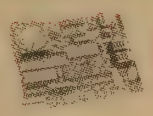
* 39 ms access time
* Auto Head Parking
* Linear Voice Coil Activator
* One Year Limited Warranty
* Cables, AT sliding rail and Software included

QUALITY & PRICE

20MB 4026	$528
30MB 4038	$599
40MB 251	$628
72MB (23 ms)	$1095
80MB 4096 (28 ms)	$1195

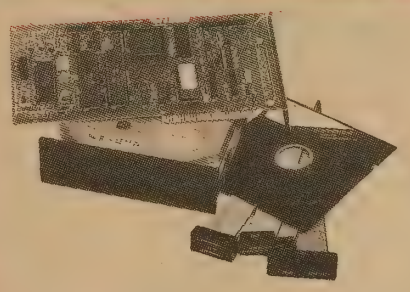
EVEREX MODEM—HAYES COMPATIBLE

* Half size/Half power
* Excellent for Long Distance calls
* Free Bitcom Communication software
* One Year Limited Warranty
* Fully compatible with Hayes 1200 Baud Smartmodem
* FCC class 'B' approval



1200/2400 Baud	300/1200 Baud
EVERCOM 24 $229	$128

20/30 MB HARD DISK SUBSYSTEM



For PC Upgrade to XT

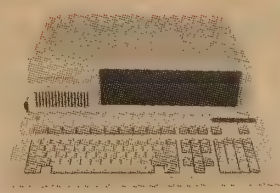
	INTERNAL	EXTERNAL
20MB	$365	$567
30MB	$425	

* 65 ms access time
* Boots from Hard Disk
* Western Digital Controller
* Manual, Cables, Hardware and Software included
* 20/30MB Seagate Hard Disk

With Floppy Controller Add $50
(This applies to 20MB subsystem only)

CLUB XT TURBO 4.77/8.0 MHZ

* 360K Floppy Drive
* 135W Power supply
* Electrical: 115V/220V
* 8088-2 CPU, 4.77/8.0 MHZ
* Legal Compatible BIOS
* Floppy Disk Controller
* 8087 Math Co-processor (option)
* Dimension: 17.5 x 19 x 6.1
* 640K Memory
* 90 day Warranty
* Quanity discounts available



$505

MULTIFUNCTION EMS

* For PC/XT and AT
* 1 Serial Port (2nd optional)
* Parallel port, Game port
* Real time clock
* Support Base and EMS Memory
* Capable to increase memory to 2 MB

CALL

WEEKLY SPECIALS

	Qty. of 2
Toshiba 72MB	$995
Seagate 251	$575
Teac Floppy 360K	$89

CHIPS

64K DRAM

150 ns (9 pcs.) $9
120 ns (9 pcs.) $12

256K DRAM

150 ns (9 pcs.) $27
120 ns (9 pcs.) $36
100 ns (9 pcs.) $45

HD/FLOPPY CONTROLLER

FOR AT

$170

FOR PC/XT

$140

OTHERS

HARD DISK CONTROLLERS	
* Data Switch Box	*$88*
* PC/XT controller	*$90*
* Floppy controller	*$49*
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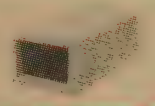

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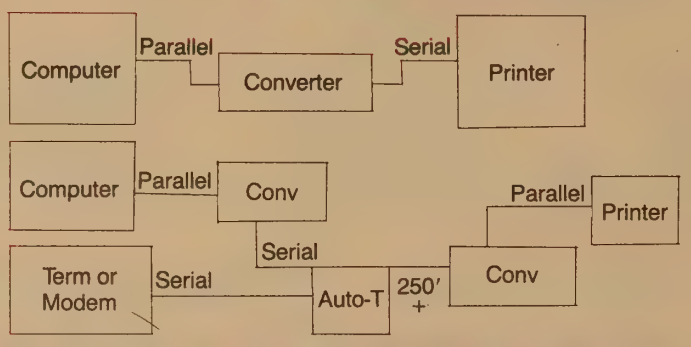

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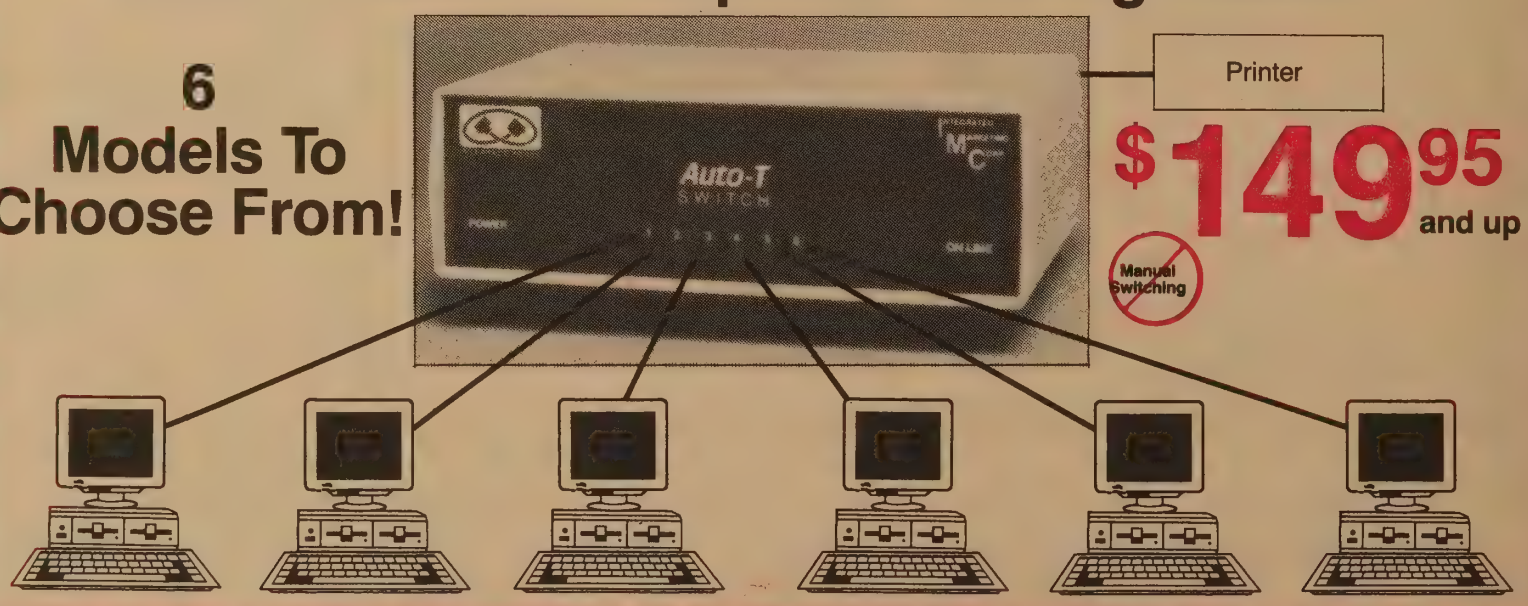

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On The Firing Line

Quality Products For Special Needs

By Stephan Wickham and the Diamond Software Technical Team

This month we would like to discuss several products that have been useful to us at Diamond Software—a review processor, the first high-speed EMS board for the IBM AT, a print utility and a system clock.

dClock II

Micro Sync has introduced a new clock design that's even more innovative than the original version, which was installed onto the system board. dClock II does not take up any expansion bus slots and does not patch into the system board. Rather, it plugs into the back of your floppy disk drive. The card snaps onto the data cable connector, and the data cable from the floppy controller plugs into a connector on dClock II. Clock power is maintained by a 3V, 120mAH lithium battery that should only need replacing every three years.

Pizazz

We have run across a fantastic print utility that's just perfect for those who do graphics on their screens but don't have access to a color printer. Application Techniques' print program *Pizazz* is able to add very attractive monochrome shading to output that's intended for color printers. With *Pizazz* you have 30 different monochrome print shades, and you have full grey scale capabilities, along with a wide selection of patterns. This allows images displayed in color to be reproduced on monochrome printers in much the same way as a color photograph can be reproduced in black and white.

Pizazz also lets you paint your graphics pictures with more than 200 color tones if you have a popular color printer. The easy-to-use menu provides total control over all print functions. Change print colors or grey tones, change sizes and/or proportions, rotate, window, change print density, select the most appropriate placement on the page, and more. *Pizazz* has drivers for over 100 different printers. It is able to automatically detect all display modes when used with an IBM EGA or CGA card or compatible. Users lucky enough to have a color printer can print out a color chart that's a useful guide for selecting color shades to fill graphic images.

ForComment

At Diamond Software we have recently started to use a new review processor from Brøderbund. With it we create documents, and up to 16 people can review, make comments, or suggest revisions to text pproduced on a word processor. *For Comment* works with *WordStar, MultiMate, WordPerfect* or any ASCII file.

ForComment fills a niche not addressed by any other product. Unlike products such as *SmartNotes* or *Red Pencil, ForComment* can be used by up to 16 people, and the author collates all their comments into one file. It also creates a detailed audit trail of who said what when. We have found that *ForComment* increases accuracy and quality. Using *ForComment* means an end to deciphering illegible handwriting. Comments are more substantive and thoughtful when document reviewers aren't forced into writing in the margins. A really slick and easy feature is that the comments and suggested revisions pop up in a window at the bottom of the page, if the user stops the cursor at lines with bullets before them. In the bottom window, the comments and revisions are marked, and the author can swap revisions in and out. The original writing is never lost, and the author can go back and forth in a snap.

With *ForComment* everyone can use a different word processing program. Simple Lotus-like menus are used to run the system, and the author is legally able to give out as many "reviewer disks" as necessary. The author's program is limited to a single person by license and is a little more complicated than the review modules. *ForComment* suggestions can each be up to 64 lines long, and the system is able to effectively keep track of up to 26 suggested revisions for each marked section of text. Reviewers are also able to comment on other reviewers' suggestions and revisions. Every single step during the review process has a date and name stamp.

ForComment will automate the middle stage of your document preparation. The first steps are normally done on your word processor. So are the final stages—formatting and printing. But the middle stage is usually done by hand, and that's what drives most of us nuts. With *ForComment* a final draft can be produced in a fraction of the time it would take to work from notes and other more traditional methods.

ForComment is also available in a network version that allows an entire work group to work together without having to pass disks around. With this version, network users can share the author's version of the program.

ForComment is a very necessary tool for people who work in law on contract negotiations and litigation briefs, corporate communications with annual reports and press releases, personnel with policy and procedure manuals, government with RFP's and policy statements, publishing with its editing and education with instructional writing, research and grant proposals. With so much time spent on writing in American business, it would be a smart manager that looks into the advantage of working with an automated reviewing method.

Bocaram/AT

Power users please note that Boca Research now has an expanded memory board that's been certified to run up to 16 MHz. Bocaram/AT meets the Lotus-Intel-Microsoft (LIM) 3.2 standard and is the first expanded memory board we have been able to reliably run faster than 9.5 MHz. Functionally, the board is no different from Intel's Aboveboard AT. The Bocaram/AT uses an onboard wait-state generator to allow operation up to 16 MHz. The Bocaram/AT can fill in conventional memory below 640K, expand workspace memory up to 8 MB of LIM 3.2 specification EMS memory, and provide up to 14.5 MB extended memory. Unlike other boards which utilize software emulation of the LIM 3.2 standard, Bocaram/AT uses a hardware designed expanded memory specification (EMS). This board is the "real stuff" and operates right from hardware. The maximum memory of a single board is 4 megabytes, which is done by having 2MB on the base card with a 2 MB daughter card snapped on top. The Bocaram/AT is also one of the few boards that currently fit the IBM XT 286, which has a reduced case height. The Bocaram/AT also permits a warm reboot (Ctrl, Alt, Del reboot) without the loss of RAM resident files. Many memory boards like the Intel Aboveboard lose all the RAM data with warm reboots.

The Bocaram/AT comes with a program called BRTEST that will provide diagnostic information regarding the port (usually 268) and segment (usually D000) addresses, should the user have trouble getting the system to recognize the board. The software also can help locate a faulty RAM chip. RAM disk and print buffer utilities are also included, providing faster disk access and performance of PC functions during printing. Both utilities access expanded memory up to the maximum available. The extended memory setting utilizes the features of the 80286 microprocessor and will operate with IBM PC-DOS's VDISK, XENIX and future versions of DOS. Users should also note the fine Boca Research two-year warranty.

In addition to being a fast board, theBocaram/AT is able to co-reside with the Intel Above Board, Boca Research Memek, and the Companion Card by Mega/Omega. Other boards will soon be tested for compatibility. Power-users will use the Bocaram/AT by itself because the other boards aren't fast enough to keep up. Like all Boca Research products, this one's installation is a breeze—just pop the Bocaram/AT into a 16-bit bus and follow the menu driven installation instructions provided on diskette.

Question Of The Month

Can I connect a monochrome monitor and color monitor to my IBM PC system at the same time?

Yes, an EGA or CGA adapter can work with a system that has the IBM monochrome adapter, without anything fancy being done on your part. With an EGA card, set your switches on the card following the manufacturer's recommendations for a two-monitor system. You will also need to set your system board switch for the two-monitor position. To switch between monitors you can use the DOS MODE command. This is part of your PC-DOS (MS-DOS) operating system. A number of CAD/CAM implementations use the monochrome monitor for operating system commands and the color monitor for displaying the drawings.

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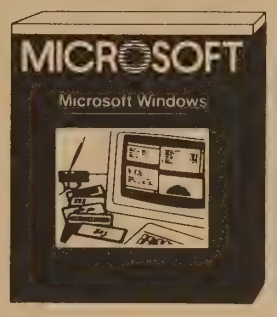

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Microsoft Windows increases efficiency by allowing you to switch between programs with ease and to rapidly move information from one program to another. Windows includes several utility programs like RAMDrive, which along with memory expansion cards, ignores the 640K limits of the PC.

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- 5150XT $45

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Microsoft (206/882-8080) has announced that MS *Word 3.0* for the Mac will take full advantage of the AppleShare network, making it the first Mac word processor optimized for Macintosh network environments. This support takes effect immediately with the shipment of MS *Word 3.0* and will be extended over time to other Microsoft applications for the Mac, such as *Excel*. MS *Word* was optimized for the AppleShare network by including special features such as file sharing. A read-only mode can be specified in *Word*'s dialog box so that users in a work group can review the same document without altering the original. The software can be installed on the file server and accessed simultaneously by several users.

Odesta (415/962-8661) *MultiUser Helix*, *Double Helix* and *Helix VMX* software products fully support AppleShare server software.

PCPC (813/884-3092) has announced *HFS Backup* for AppleShare, a multiuser version of its *HFS Backup* archival utility for Macintosh hard disks. The new version is designed for workstations on AppleShare. The program makes copies of hard disk files and folders and stores them on floppy disks for safekeeping. Recent improvements in the program include greatly enhanced speed, expanded use of the Mac graphic interface, and a file "filter."

Pacer Software, Inc. (619/454-0565) introduced *PacerPrint*, a package that allows a DEC VAX running VMS operating system to function as a server for PostScript compatible printers, through support of ACF.

Reach Technologies Inc. (512/280-1977) has new enhancements to its network server family which now supports ACF. New products include *Nucleus*, which runs as a true file server for the AppleTalk network. ($1,595)

Satori Software (206/443-0765) unveiled a multi-user version of its *Project Billing* and *Legal Billing II* for the Mac, now utilizing the AppleTalk network and the AppleShare file server.

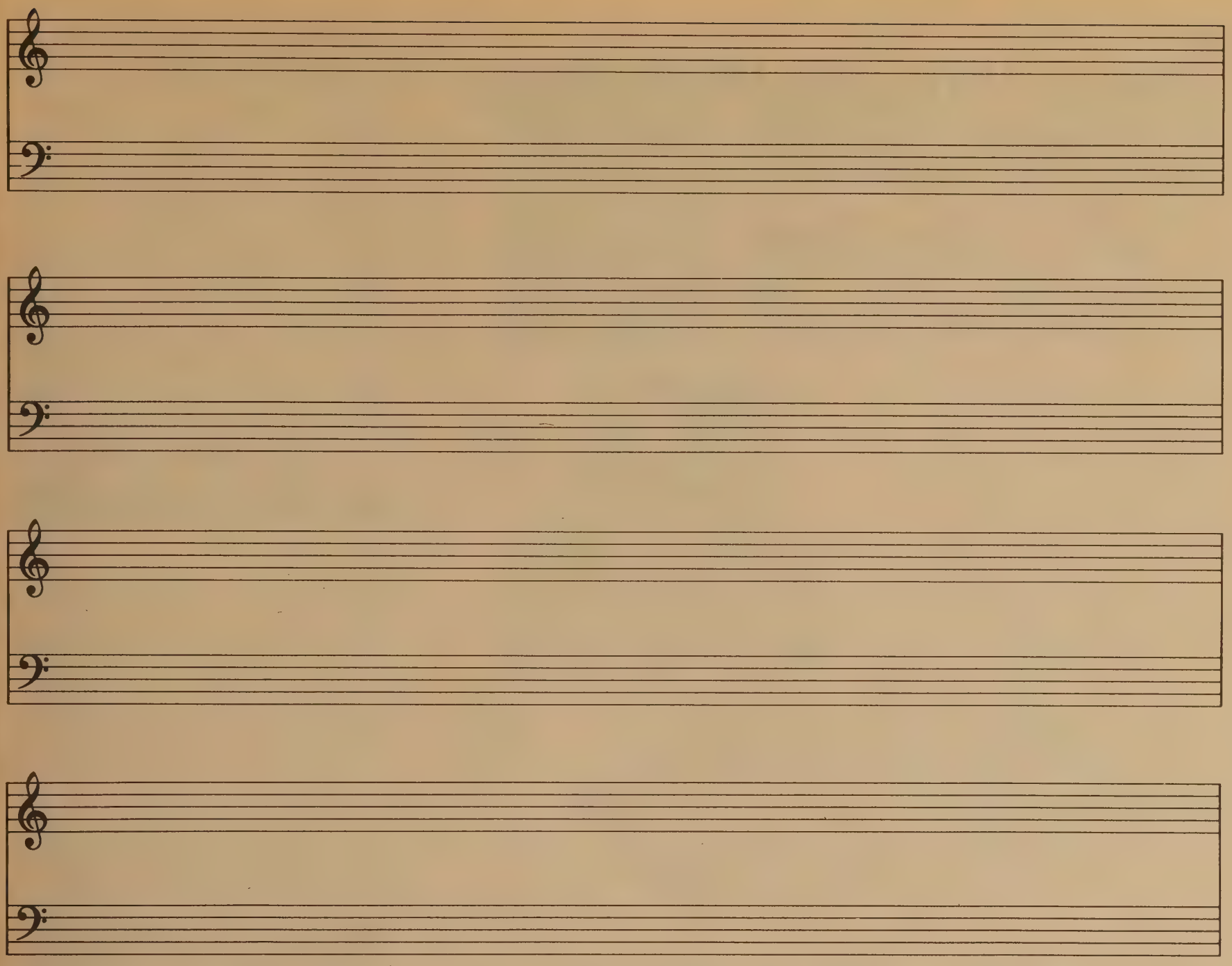
RUMORS

■ As desktop publishing continues to grab more and more market share, more and more companies are becoming involved. For the Mac user, it appears as though *PageMaker* from Aldus may get a run for the money—this time due to an expected offering from Target Software called *Scoop*. The program can manage newsletters, catalogues and the like with the same convenience as *PageMaker*, but you can also set text to conform to the dimensions of any object. Graphics and text can be treated as a single object.

■ Stock traders take note—odds are that the president of Epyx, Inc., a home software company based in Redwood City, will announce a public stock offering later this year.

■ We can nearly guarantee that Hewlett-Packard will be releasing two new LaserJet printers and a scanner, sometime during the first quarter of this year. And these new printers'll knock your socks off, both performance and cost-wise!

■ Keep your eyes on Commodore, 'cause they're going to be releasing two new Amiga models sometime during the second quarter of this year, with both machines being targeted for niche markets. One will run in the $600 range and will be the Amiga 500, aimed at the home user. The second new machine is rumored to be the Amiga 2000, the "high-end" Amiga, selling for around $1,500. This latter machine'll pack nine expansion slots, allowing for that PC compatibility board. And you know what else might occur? Just like Atari, Commodore is thinking about—a laser printer!



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Softview, Inc. (805/388-2626) has updated the *MacInUse* product to support ACF, with *MacInTax* also available in a LAN version.

Solutions, Inc.'s (802/229-0368) *Glue* now allows for Image Sharing between users utilizing AppleShare.

SuperMac Technology (415/964-8884) announced a line of SCSI hard disk drives fully compatible with AppleShare.

Tangent Technologies (404/662-0366) introduced the PC MacBridge/AFP, a software package that allows IBM PCs access to Apple's AppleShare file server.

THINK Technologies, Inc. (617/863-5595) offers InBox for the PC, which allows people working with Macs on AppleTalk networks to communicate with others working on IBM PCs and compatibles on AppleTalk networks.

NEW PRODUCTS

APPLE II FAMILY

Accolade Comics

Accolade (408/446-5757) has released *Accolade's Comics*, the first interactive comic book. Featuring two distinct themes and dozens of major and minor story lines, incorporating eight arcade-like games, this program is the story of a spy named Steve Keene whose mission is to foil evil plots for the Chief of Spystuff, Inc. *Accolade's Comics* offers the user the experience of reading a comic book on a computer screen, combining detailed graphics and humorous animation. ($44.95)

Ring Quest

Electronic Arts (415/571-7171) has released *Ring Quest*, a fantasy adventure game from the creators of the *Ultima* Series, Origin Systems. *Ring Quest* involves players in a fictional world of fantasy and magic where they must solve puzzles through shrewd management of the game environment. Two games of skill are included in the game to test the player's skill and endurance. ($19.95)

Amazing Software

Electronic Arts (415/ 571-7171) has announced an all new Amazing Software line of modestly priced products aimed at 12-to-16 year-olds. There are also six additions to its Software Classics line of value software. Amazing Software is aimed at the teen male market, with emphasis on great graphics and lots of action, all for a price of under $20. Quality import titles from around the world will be used, as well as original products developed in-house. Amazing Software will be produced exclusively for the Apple II and Commodore 64/128 market, with the launch to encompass two new products: *Dan Dare, Pilot Of The Future*, and *Dark Lord*.

Dark Lord is a graphic adventure that features

Correction:

In our last news column, we discussed clip art for desktop publishing on the IBM PC. In the process, we erroneously gave a software publisher's name as PC Clip Art. The software in question, which offers a large library of clip art for this environment, is in fact called *PC Quik-Art* and is published by PC Quik-Art Inc., 394 S. Milledge Ave., Suite 300, Athens, GA 30606. PC Quik-Art's phone number is (800) 523-1796.

We apologize to PC Quick-Art and anyone else who has been inconvenienced by this inadvertent error.

—eds.

high-speed color graphics and animation, as well as over 80 game locations. An evil wizard has risen from his grave to enslave the Alterworld, and only ingenuity, cunning and a touch of magic can end the tyranny.

New From Epyx

Epyx, Inc. (415/366-0606) has introduced *Sub Battle Simulator*, the first title in the company's new Masters Collection series. This offering is a detailed and completely realistic submarine war simulation. The game puts players in command of any one of six different classes of US Navy submarines or German Kriegsmarine U-Boats during the period 1939-1945. Players can choose from over 60 different single missions staged in either the Atlantic or Pacific, or play out the entire war. Each mission is based on genuine historical data.

Street Sports Basketball is a second offering. The Street Sports line represents a novel approach to sports software in that it recreates those winner-take-all, playground pick-up games enjoyed by kids of all backgrounds. With this game, players pick their three person team from 10 very different individuals. There are also four different neighborhood scenes, and obstacles such as curbs, oil slicks and fences.

Create A Calendar is a new, easy to use program that's perfect for those who want to design their own daily, weekly, monthly or yearly calendars up through the year 9999. This program offers an assortment of calendar types and a wide variety of decorative fonts, borders and graphics suitable for almost any occasion. Graphics from the Epyx *Graphics Scrapbook* series or *Print Shop* compatible graphics disks can also be used.

Epyx is also releasing the next chapter in the *Graphics Scrapbook* series. *Chapter III: School* contains graphic images perfect for students, teachers, school administrators and PTAs. The art is for newsletters, banners, flyers, cards and posters, and covers subjects from geometry to driver's education, student body elections to band practice, school plays to cheerleading tryouts, dances, fund raisers, rallies, graduation and much more.

More For The Teen Gamer

IntelliCreations, Inc. (818/886-5922) will release *Saracen* and *Black Magic*. Recent action/strategy and action/adventure games are usually geared toward an audience in the 26-38 age range, whereas these two releases are specifically for the 10-18 year old group. Pricing will reflect the age group; there are over 100 individual screens in *Saracen* and *Black Magic* to keep players on their toes.

AppleWorks For Visually Impaired

RC Systems, Inc. (206/ 672-6909) is introducing the *AppleWorks Companion*, a program which gives visually-impaired Apple II users full access to *AppleWorks*. The program enhances the *AppleWorks* word processor, data base and spreadsheet by providing oral keyboard feedback and full screen-review features. In this manner the user can "see" what is on the screen by using special commands that are added to *AppleWorks* by the *Companion*. The user can also have any file read to him before it is printed.

ATARI

3D On The ST

ANTIC Software (415/957-0886) has debuted a breakthrough in real 3D viewing. The system includes "Stereo Tek" electronic liquid crystal shutter glasses, which are plugged directly into the cartridge port of an Atari ST computer. Two

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Every month in the pages of MicroTimes, industry expert Jan Lewis of the Palo Alto Research Group offers topical analysis of industry issues and trends. Check "But Jan Lewis Says. . ." in this issue.

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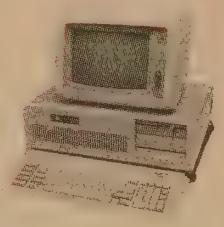

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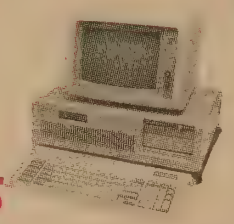

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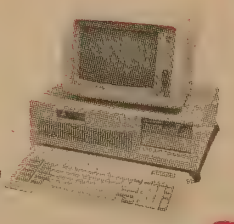

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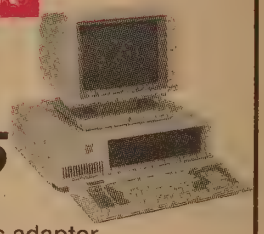

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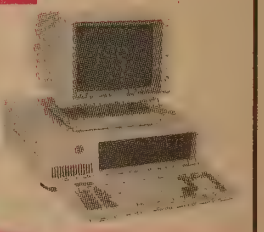

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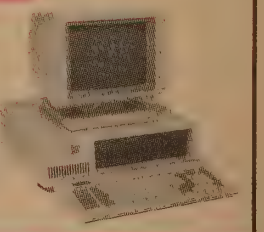

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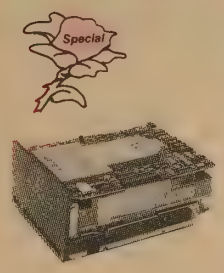

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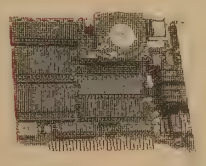

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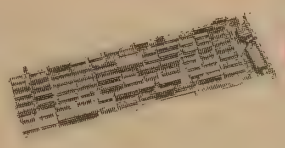

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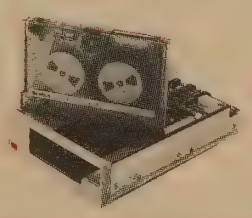

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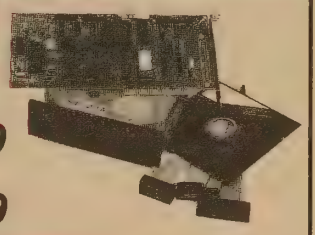

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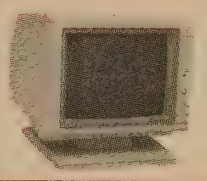

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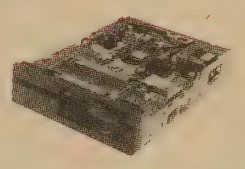

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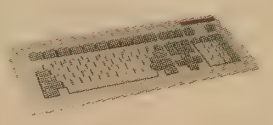

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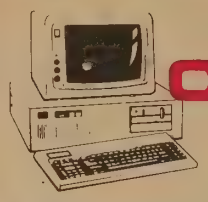

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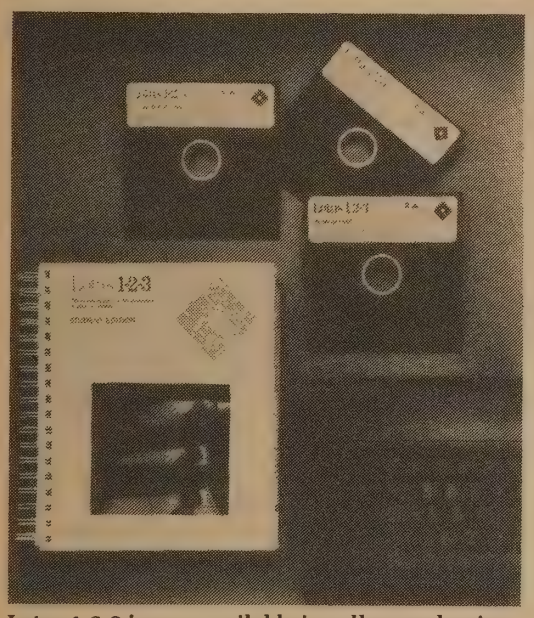
One of the first programs to use the *Stereo Tek* glasses is *CAD 3-D*, 2.0, written by Tom Hudson, who also wrote *D.E.G.A. CAD 3-D* provides tools for creating 3-D objects or scenes and viewing those objects or scenes from different angles, distances and perspectives. ($199.95)

Chessmaster 2000

Electronic Arts (415/ 571-7171) is introducing *The Chessmaster 2000*, winner of the 1986 U.S. Open Personal Computer Chess Championship, for Atari ST computers. The *Chessmaster 2000* is based on an algorithm that was rated at 2,018 by the U.S. Chess Federation. It contains the largest opening move library ever available on a microcomputer. There are 12 levels of play, ranging from Newcomer to Grandmaster, as well as a Teach Mode and a Hint Mode. *2000* also acts as a referee, and its graphics and voice synthesis capability are quite impressive. The board can be viewed with a two- or three-dimensional display, and the 3D board can be rotated to see the play from any angle.



Lotus 1-2-3 is now available in college and university bookstores in a special student edition.

1-2-3 Student Edition

Addison-Wesley (617/944-3700) has introduced *Lotus 1-2-3 Student Edition,* an educational version of the world's most widely used business productivity software. The software, developed by Lotus Development Corp., will be marketed, documented and distributed to the higher education market exclusively by Addison-Wesley. The *Student Edition* is a fully functional version of *1-2-3* that has been customized by the company for instructional applications. Extensive teacher and student manuals included with the product provide instructor-designed lab exercises for use with college courses. Spreadsheet capacity is 64 columns and 256 rows, whereas the standard *Lotus 1-2-3* has 256 columns and 8192 rows. This version will be sold through college bookstores at a pricing expected to be under $50.

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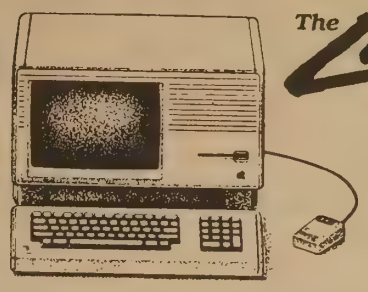

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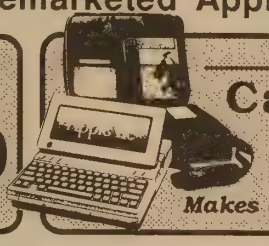

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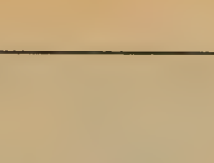

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MRCA-Mach 2

Firebird Licensees has released *MRCA–Mach 2* for Atari 8-bit computers. This is a combat flight simulator based on the USAF F-15 jet fighter. The program has 3-D cockpit displays, a full complement of aerobatic maneuvers, air-to-air combat, crosswinds, turbulence, blind landings, training modes and pilot skill ratings. The program utilizes a joystick in port 1 for game-play and comes with a full-color poster of the jet. ($24.95)

New MichTron Releases

MichTron (313/334-5700) has announced several new releases for Atari computerists. The first is *GFA BASIC*, a high level language for the Atari ST that is as easy to program as BASIC, yet offers full access to system features and an execution speed that rivals assembly language. The program offers the user a BASIC interpreter which is very compact at only 55K of RAM. The Interpreter needs less than a half a second to carry out an empty FOR-NEXT LOOP 10,000 times. Many other features are included. ($79.95)

The company has also announced *Karate Kid Part II*, developed by the English company Microdeal. *Karate Kid II* tests your skill and bravery in the world of life and death karate competition. There are no trophies, no points, no referees—this world has no rules, no laws. To win is to survive. You must guide young David through fight after fight against increasingly powerful adversaries. When you have completed these tasks, you then face the evil Chozen himself in the majestic castle of King Shohashi. You must discover the secret of the drum—or die. ($39.95)

The third offering is *Match Point*, the largest selling computer game in Europe. This is a new and completely realistic tennis game that simulates every aspect of tennis with incredible graphics, true to life scoring, and three-dimensional playing screen. The player movement is both fluent and realistic. Along with a full stadium of fans, and line judges to call the close ones, *Match Point* even features ball boys to retrieve the net shots and a score board to keep track of the game statistics. For the Atari ST. ($39.95)

The fourth new program is *TRIMbase*, a data management system that operates much like an ordinary card filing system. The program keeps a set of record cards on which you can write such information as names, addresses, personal or business details, class and exam results, birthdays, or any other information you may need to record. The program takes only seconds to find all the records you wish to review. Reports can be produced both as tables and text and *TRIMbase* is capable of exchanging data with other software applications. ($99.95, introductory price - $150 normal retail)

Other new MichTron offerings include: *GFA Compiler*, a BASIC Compiler; *GFA DRAFT*, a 2-D drafting program; *Journey To The Lair*, the driver for the arcade video disk game *Dragon's Lair*; *Laser Driver*, the GDOS drivers for the Quadram, Hewlett Packard and PostScript laser printers; *R.A.I.D.*, a new debugger for programmers; *Realtizer*, a new digitzer from Print Technique that the company will be distributing in the United States; *Shuttle II*, a new space shuttle simulator; and *SuperDirector*, a new disk cataloguer.

The Graphic Artist 1.52

Progressive Computer Applications, Inc. (301/340-8398) has announced Verison 1.52 of *The Graphic Artist*. This upgraded offering provides a print queue and includes more printer and plotter drivers. It also includes improved driver editors which allow the user to easily support virtually any dot matrix printer, including 24 pin printers, laser printers and plotters. In addition, version

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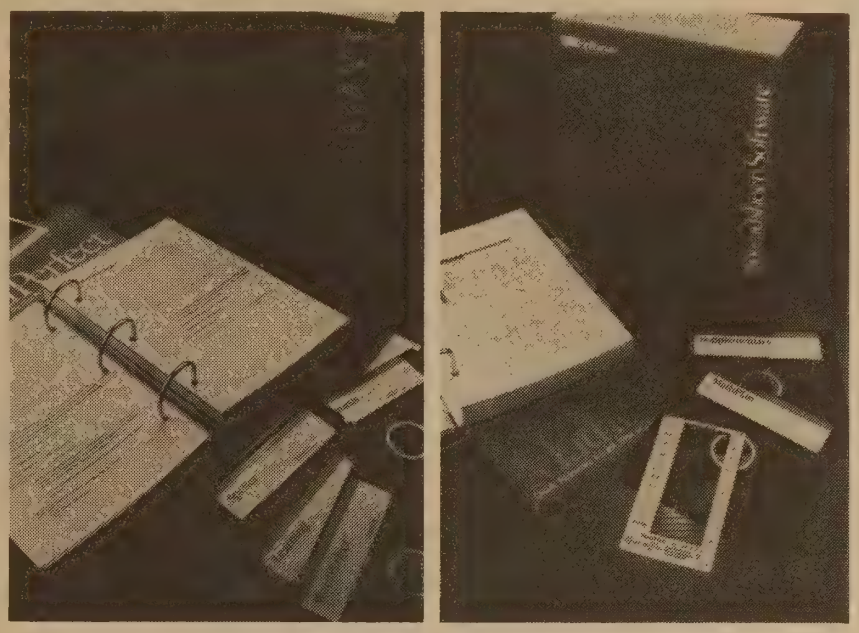

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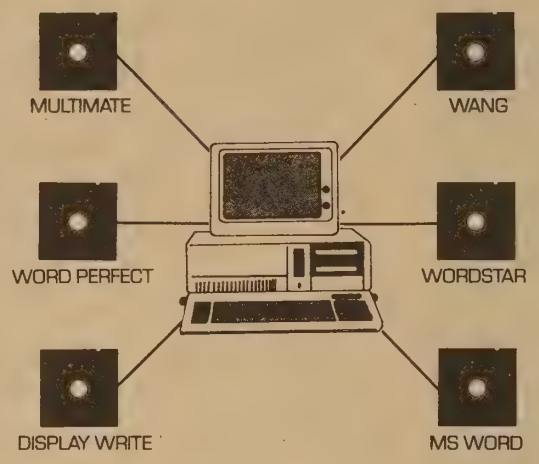

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1.52 displays the last mouse coordinates displayed while coordinates are typed in, and features improved pathname syntax checking, printing tips, more precise text margin alignments, and over a dozen other improvements. ($79.95)

Software From Regent

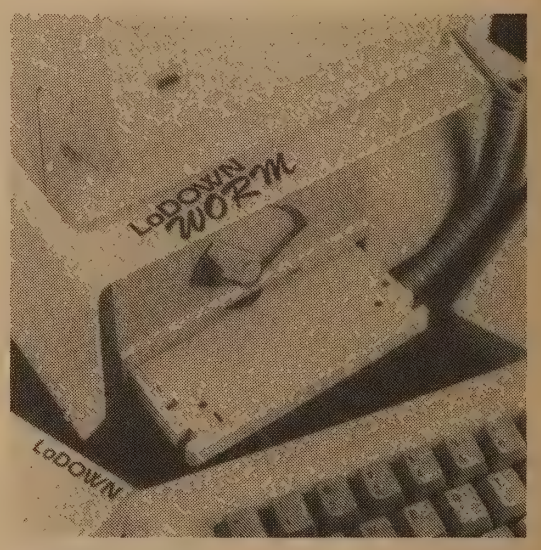
Regent Software (818/882-2800) offers a comprehensive inventory control system, with custom reporting and sales projections based on sales history. This program, entitled *The Inventory Manager*, offers purchasing projections based on seven user-definable parameters. Eleven inventory reports are built in, and an additional capability offers generation of Custom Reports. Some additional features include tracking of up to 40,000 parts, 16 digit part numbers and descriptions as well as other extras.

Regent also has a new version of *Regent Base*, a relational GEM database for the Atari ST. There are 25 new commands, a GEM based Utilities program, and new applications. *Regent Base* is the only relational database for the Atari, and the only GEM based database for the ST with a complete procedural language using the Sequel language. The new Utilities program gives users ten new functions to manipulate and modify *Regent Base* using only the mouse.

COMMODIRE/AMIGA

PHM Pegasus

Electronic Arts (415/571-7171) has introduced, with Lucasfilm Games, *PHM Pegasus*, a combat simulation game involving the player in an unusual form of naval combat—using hydrofoil missile craft. Players control their own hydrofoil as they battle in oceans with numerous enemy vessels in any of eight different combat assignments. ($39.95)



LoDOWN's WORM connects to the Mac's SCSI port and brings optical laser disk technology to the Macintosh.

WORM For Mac

LoDOWN (408/438-7400) has announced the first high capacity WORM 400 MB or 800 MB optical laser disk for the Macintosh. The LoDOWN WORM connects to the high speed SCSI bus with one simple cable and offers the most reliable data storage protection. The projected life of optical media is 10 years. LoDOWN's Optical WORM controller features a sophisticated error correction technique that provides the end user with a bit error rate of less than 10-12 at the media life of 10 years.

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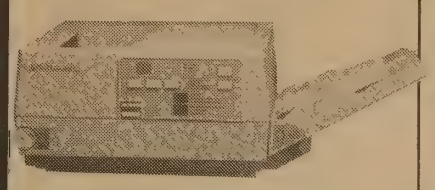

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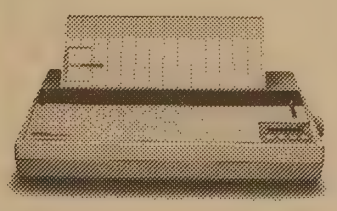

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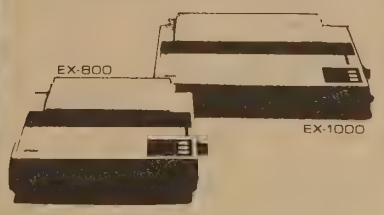

- Prints draft mode at a fast 300 characters per second, 60 characters per second in Near Letter Quality mode
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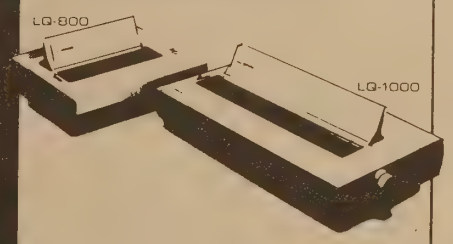

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EA's Amiga Releases

Electronic Arts introduced two new entertainment software offerings. The first is *Return To Atlantis*, a novel-size graphic adventure that sends players on secret underwater missions around the world in search of the legendary city of Atlantis. ($49.95)

The second offering is *Earl Weaver Baseball*, a powerful action and strategy baseball simulation co-authored by baseball's most winning manager, Earl Weaver. On the game's most fundamental level, the arcade play is a sophisticated simulation which features high-resolution graphics and realistic sound to produce the sense of an actual baseball game. On the strategic level, players can step into the manager's shoes as Player-manager or Manager to set line-ups, trade and draft players, yank pitchers and outwit a variety of opponents—even the wily Mr. Weaver himself. ($49.95)

Tracker

Firebird Licensees, Inc. (201/920-7527) has a new recreational software product for the Commodore 64/128 that involves artificial intelligence (AI). *Tracker* combines AI with a huge playfield, high-speed action and graphics to move tactical warfare on microcomputers into a new dimension. Actions involve player control of eight Skimmer craft with the objective of wiping out the renegade Cycloids. You must maneuver quickly through 3-D battle sequences while the program uses AI to increase the difficulty level. In this manner, the Cycloids try to match your tactics, as well as remembering them.

Amiga Releases From Gamestar

Gamestar (415/960-0410) has introduced two new releases for the Commodore Amiga computer. The first is *Championship Golf: The Great Courses of the World—Volume One: Pebble Beach*. This program authentically recreates the layout of this world-renowned course and uses enhanced graphics to accurately depict the placement of sand traps, fairways, roughs and trees. To enhance play, the player can view all 18 holes of the course from multiple perspectives, and can control club selection, stance and type of swing for each shot, and much more. ($54.95)

The second offering is the Amiga version of *The Music Studio*, which provides "Interchange File Format" (IFF) compatibility. With this version, song files created on other music composition programs such as *Instant Music* can be loaded into *The Music Studio* for editing and enhancement; in addition, *The Music Studio* compositions can be downloaded to other IFF programs that utilize music, such as *Deluxe Video*. This is a very comprehensive music composition program for home use. ($59.95)

IBM AND COMPATIBLES

Windows Device Drivers

Microsoft Corp. (Redmond, WA) has shipped the first volume of the Microsoft *Windows* device driver. The package includes support for printing devices such as AMT Color InkJet, Hewlett-Packard ColorPro, IBM 3812 Pageprinter and the IBM Color Jetprinter; pointing devices such as FTG Data Systems Lightpen and Maynard Electronics Mouse; and graphics devices such as Conographics ConoVision 1440, Miniterm Viking I, Wyse WY-700 High Resolution Display Adapter, and Video 7 Vega Deluxe with NEC Enhanced Color Display.

Dragnet

Access Softek (415/654-0116) has made available *Dragnet*, a program that finds information about a common theme or topic scattered through many files and collects that data into a single summary file. The program can read documents from any application in any format, including spreadsheet and database files. ($145)

Borland's Turbo C

Borland International (408/438-8400) is offering aid to those programmers with serious software development projects as well as novices taking their first attempt at the C programming language. The new language development system compiles 7000 lines of code per minute. *Turbo C* provides a one-pass compiler, full control of memory models and extensive code optimizations. *Turbo C* is a high level language tool that delivers programming control at the low end as well.

Championship Baseball

Gamestar (415/960-0410) will release *Championship Baseball* for IBM micros and compatibles shortly. This is an exciting baseball simulation that makes the player the team manager and player for an entire season of big league action. You select each member of your team and put them in competition against the computer or a friend. You can have your team play exhibition games to give them as much practice as you want. When your team is ready to play, this game invites you to enter the 24-team, four-division race for the pennant. ($39.95)

Red Pencil

Capsule Codeworks (206/235-7099) has announced a new low price of $199 for its markup and correction software, *Red Pencil*. The program now also includes operation with keyboard only (the mouse is no longer required), "find" command to search manuscript text, block stet oper-

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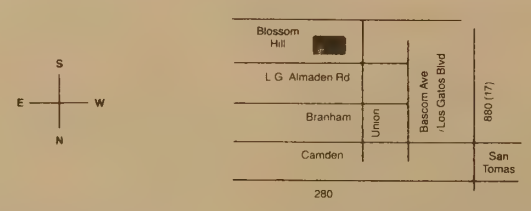

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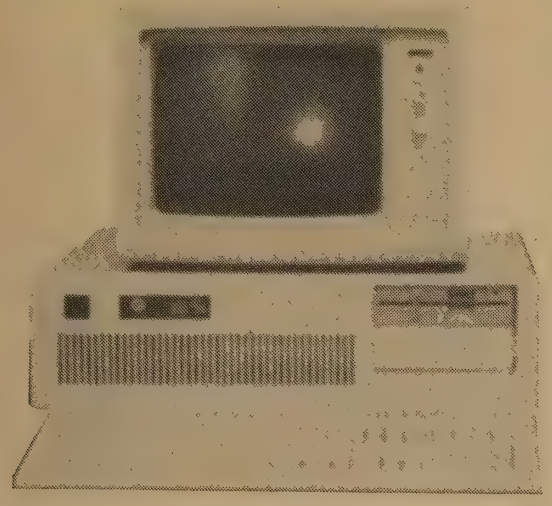

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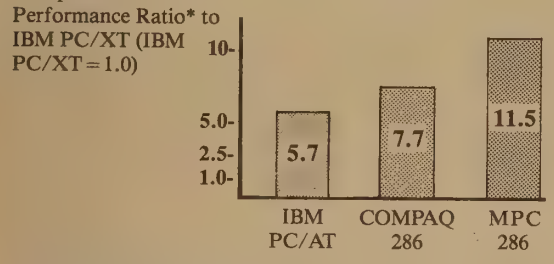

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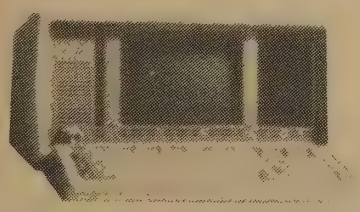
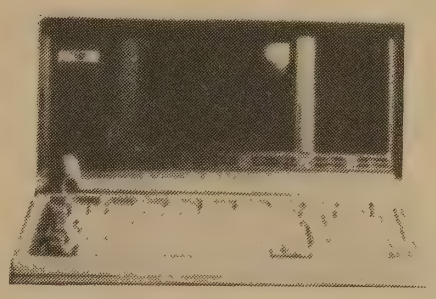
- Compatible with wide variety of operating systems, such as PC-DOS, MS-DOS, XENIX, UNIX, Multilink advanced, and other version of Concurrent Dos.
- Compatible with available multitasking and task switching software packages, including Microsoft Windows, Deskview and Topview.



P-286 TARGA 6/10 MHZ PORTABLE

P-286 TARGA is smallest and fastest portable computer in the industry. P-286 TARGA comes with 1024k R.A.M., Serial, Parallel clock calendar, 1.2 MB floppy drive and its 100% compatible with IBM-AT or compatibles. P-286 TARGA has a dual mode screen (Hi-RES) 20 or 40 megabyte harddisk drive (optional)

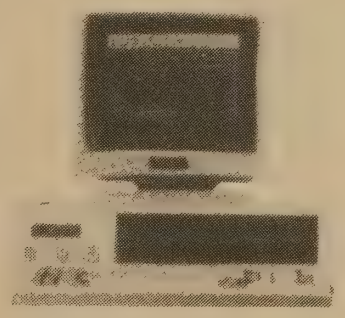
Price **$2195**



PV-20 TARGA (Portable)

PV-20 TARGA gives 100% IBM compatibility in less than 28 lbs in high powered rugged computer. Features an NEC-V20 fast processor giving you twice the speed of Compaq portable IBM XT or equal, 640k memory, 360k Floppy drive, 9" anti glare screen RGB, Serial, Parallel ports. Smaller than Compaq portable.

Price **$1199**



XT-TURBO

The feature packed model is based on an Intel 8088-2 or NEC-V20 running at 4.77 or 8 Mhz. The standard system has a 0/1 WAIT STATE on memory and operates 200% faster than IBM-XT. 640k RAM memory on board, 360kb floppy drive, Eight expansion slots, AT style keyboard, 150 watts power supply, Clock/calendar, Serial, Parallel & game port.

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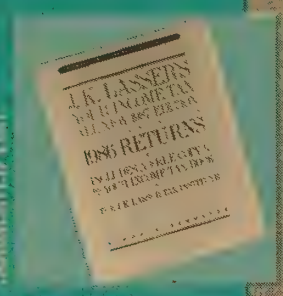

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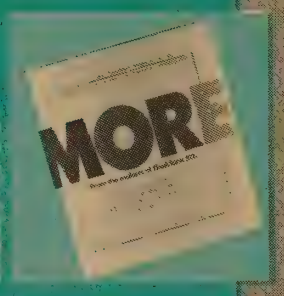

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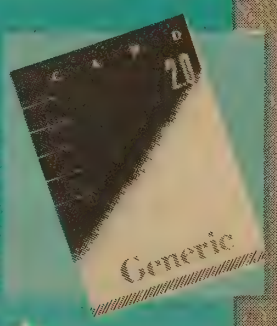

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Headlands Communications Corp

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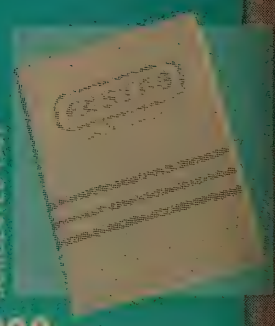

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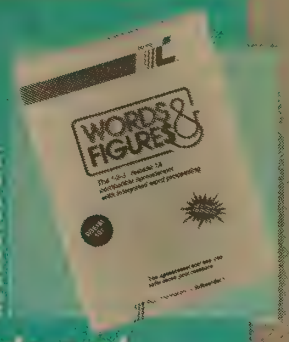

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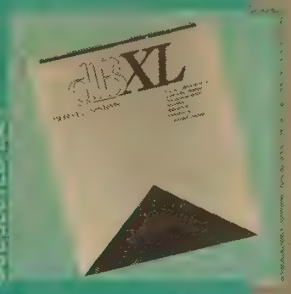

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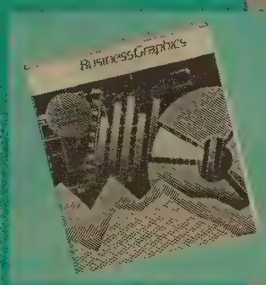

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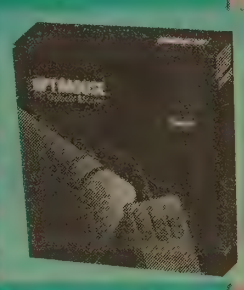

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OptiMouse with Dr. Halo II

Thousands of Lotus and AutoCAD users enhance their graphics with this high-performance paint software. Dr. Halo II, rated #1 overall by Computer Graphics World's subscribers and #1 in Schwan Digest's views and performance evaluations of the nine most popular paint packages. A mouse (Lotus 1-2-3 and AutoCAD and on. Add color, logos and art, merge text with graphics then print to laser-printers. Fully optical mouse comes with pop up menus, software, life-time guarantee, much more!

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Paul Whitehead Teaches Chess

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ation for removing multiple marks, multiple file batch processing, and conversion between single-spaced and double-spaced files. The program is an interactive software package for markup and automatic correction of electronic manuscripts and documents, and allows users to make standard editing marks on a manuscript displayed on the computer screen.

Sound Presentations

Communication Dynamics, Inc. (503/684-5151), has released version 1.11 of its presentation graphics software for the IBM PC and compatibles called Sound Presentations. Sound Presentations enables users of *Lotus 1-2-3*, *Symphony*, and Software Publishing's *Harvard Presentation Graphics* to put multiple charts on a page, edit color, pattern and size, and enhance charts with company logos, additional text, user-created graphics or clip art. High-quality slides are possible to create using Sound Presentation's link to the MAGICorp Slide Service.

Printility 5.5

Metro Software, Inc. (602/299-7313) has released *Printility*, Version 5.5. This offering is a RAM-resident software package that allows users to merge text and graphics, print standard ASCII files with imbedded printer commands, and emulate a variety of printers. Everything is managed through easy-to-use menus. New features include downloadable character fonts and support for EGA. ($179)

Labels Unlimited

Channelmark Corp. (415/345-5900) has introduced a new program that enables users to create professional-appearing labels specifying size, type heights and contents. *Labels Unlimited* is ideal for a variety of labeling needs, from name tags to video cassette labels to binder covers. ($59.95)

Multiplan 3.0

Microsoft Corp. (206/882-8080) is shipping Microsoft *Multiplan Version 3.0*. This new version has built-in support for multiple users in a networked environment, including file locking, password protection and data encryption, and the ability to link and consolidate different worksheets over the network. Version 3.0 is twice as fast as Version 2.0; it features built-in spreadsheet auditing, "record as you type" macro creation, and allows up to eight different spreadsheets to be displayed on screen simultaneously. ($195).

Pro*Path*Plus

SoftCorp. (813/799-3984) has released *Pro*Path*Plus*, a new Critical Path Method project management system with the ability to read and write *1-2-3* and *dBASE III* files directly. Scheduled for shipment in March, *Pro*Path*Plus* also features statistical planning functions permitting risk analysis and sophisticated resource management with leveling. ($495)

EGA Wonder Board

ATI Technologies, Inc. (Markham, Ontario, CANADA) is now shipping the EGA Wonder board, with drivers to allow Lotus spreadsheets to be displayed in 132 by 44 columns on TTL monochrome monitors. There is also a new screen saver program included with the board's utility programs.

Instant-C 2.2

Rational Systems, Inc. (617/653-6194) has released Instant-C 2.2, a new version of the company's new C-language incremental compiler. With this offering, users can edit an entire memory file with the **#edm** command, which enables them to re-arrange their source code files or conduct global searches without leaving *Instant-C*. Also, with a **#view** pop-up window, users can see the declarations of globals defined in other files while editing. ($199)

Vantex Word 2.0

Vantex Data Systems (201/635-5686) has introduced Version 2.0 of *Vantex Word*. This word processor for IBM micros and compatibles operates quickly and features a built-in 90,000 word spelling checker, split-screen capability, macros and unlimited document size. Other features include 30 user-settable defaults, such as automatic backup and timed save, eight sorted directory-list formats and "magic diamond" cursor movement. There's also a new manual and step-by-step tutorials. ($119.99)

Utility II Release 6

Worthington Data Solutions (408/458-9938) has delivered *Utility II Release 6* with many new capabilities, highlighted by extensive use of color printing of large text—readable at up to 50 feet. The color is selectable by each field on the label. Other improvements available include support for up to 40 fields per label, user selectable bar code density, and optional centering of fields and large graphics text characters. Thirteen sizes of text and ten bar codes are available to accommodate any label design. ($279)

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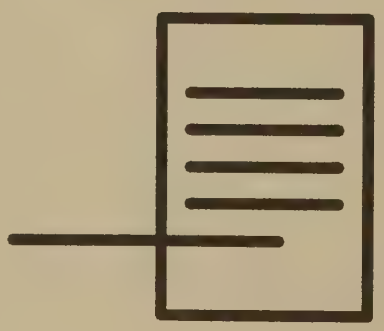

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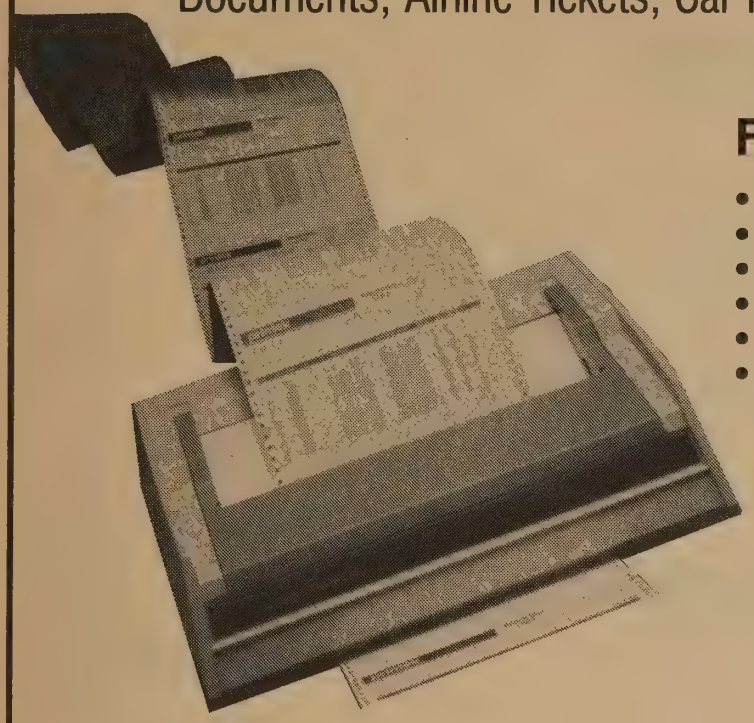

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MACINTOSH

Multi-User Appointment Diary

Imagine Software (415/453-3944) has announced *Multi-User Appointment Diary With Smart Alarms*, a networking version of its popular desk accessory package for the Mac. Supporting the ACF, this scheduling and reminder system lets everyone on an AppleTalk network write to, and/or view, the schedule for up to 21 people in the office, as well as set personalized onscreen reminders. ($149.95 plus $10 per node)

MORE 1.1

Living Videotext (415/964-6300) has announced version 1.1 of *MORE*, the integrated idea processor/presenter program for the Macintosh. *MORE* 1.1 will be mailed free of charge to all registered *MORE* users and to distributors and dealers. Features of the new version include an undo command, selective text styling, multi-level bullet charting, keyboard control, and an outline database disk based on General Information's National Directory of Addresses and Telephone Numbers. ($295)

Your Income Tax

Simon & Schuster Software (212/ 373-8882) offers J. K. Lasser's *Your Income Tax* computer software which should help reduce the time involved in preparing your taxes. The software speeds and simplifies tax preparation, as you don't waste time searching through complex IRS documentation. The information needed to complete your taxes is at your fingertips. By asking specific yes/no questions, the program determines which forms and schedules apply to your individual tax situation.

Prototyper

SmethersBarnes (503/245-7270) has announced *Prototyper*, a technologically advanced professional tool for quickly and easily creating prototyped applications, functional demonstrations, and user interface designs. Any type of application can be generated by *Prototyper* with the look, feel and response of authentic Mac applications. No technical background or programming is required to use its icon based system. The program has a built-in, step-by-step process that enables the user to access all of the features of the Macintosh.

NETWORKING/ COMMUNICATIONS

Network SmarTerm

Persoft, Inc. (608/273-6000) has announced new verisons of two of its *SmarTerm* terminal emulation software packages. Users of these new versions who purchase an optional network kit can now communicate with host computers through either the Ungermann-Bass Net/One or Bridge Communications EtherTerm network systems. Both terminal emulation packages allow IBM micros or compatibles to communicate with larger mainframe or mini hosts. The new version, *SmarTerm 220*, sells for $195, *SmarTerm 400 version 3.2* for $149.

HARDWARE/ PERIPHERALS

Signalman Secure Modem

Anchor Automation has introduced the Signalman Secure 24, an intelligent 2400/1200 baud modem for applications requiring telecommunications security protection. The Signalman Secure 24 operates with up to three levels of password protection: password, callback, and secondary password. The modem can store an average of 64 passwords and callback number combinations, and has a user secure interface via the RS232C port. The modem comes with a five year limited warranty.

ConoDesk 300

Conographic Corp. (714/474-1188) has announced development of the ConoDesk 300, a TMS34010-based product line for the IBM AT and the Compaq 386. The ConoDesk 300 series is built around custom silicon and 34010 implementations of the Conographic curve technology and font compiler. The ConoDesk products integrate Conographic technology into color graphics adapters, laser RIPs, scanner interfaces, and video capture capability. The Conographic font compiler includes interpreters for PostScript, Interpress and DDL, printer emulators for HP LaserJets, Xerox 4045 and IBM 3812, and drivers for Microsoft Windows and HALO.

Mac Scanners

Datacopy (415/965-7900) has initiated shipment of two scanning systems for the Mac Plus. The company's JetReader page feed scanner and Model 730 flatbed scanner can now be used by most of the popular Macintosh desktop publishing programs. The accompanying software has been named *MacImage*. The JetReader sells for $1,300, and the Model 730 flatbed scanner is $1,800. The MacImage Kit is available at $695.

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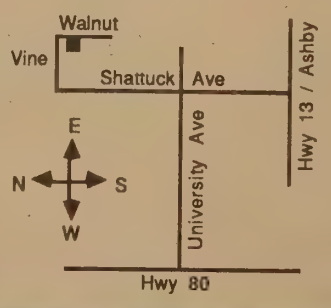

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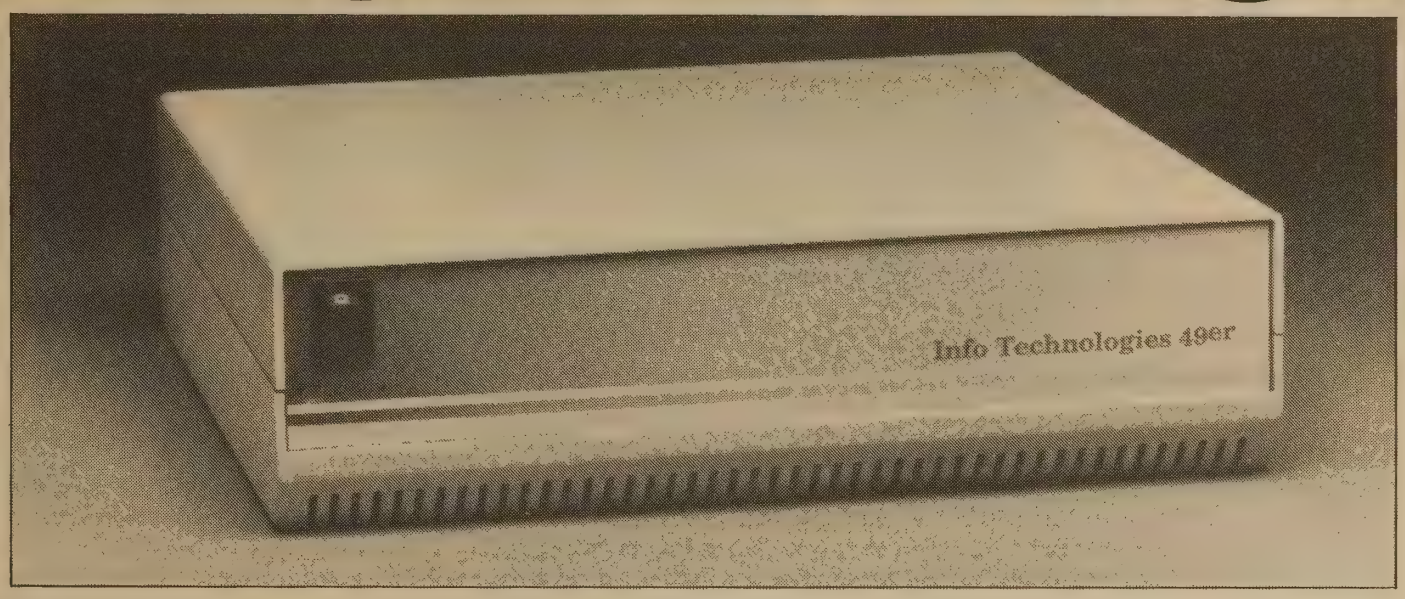

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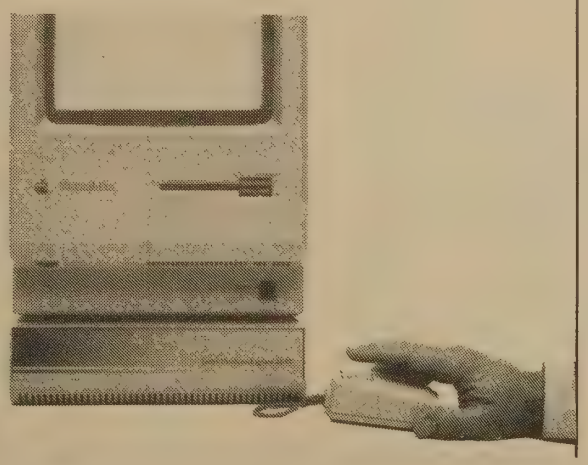

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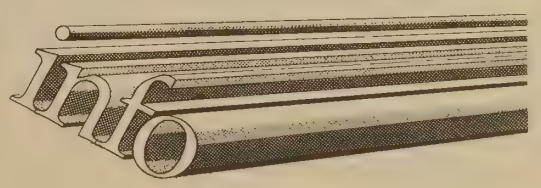

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DEALER INQUIRIES WELCOME

Cloneware:
Smart Software For The Clone User

By Pamela Monroe

For most of us, mathematics and toxic spills have about the same appeal. That's why the world is teeming with guys named H. & R. Block and fellows sporting chemical cleanup suits—to take care of the mess. Though it can't do much about toxic chemicals, Advanced Logic Systems' newest package, the *18C Financial Consultant*, makes H & R Block seem pretty primitive.

Fact is, the *Financial Consultant* does a lot more with an IBM PC or compatible than help you deal with the IRS. "This is not a calculator," says ALS vice president Nathan Schulof, an out-of-the closet mathphobe. "It's a collection of programs with templates, where you answer the questions and it gives you the answers you want to know." In fact, there are nineteen templates to choose from, including loan amortization, percent calculations, break even analysis, and discounted cash flow. For instance, you can choose the "dates" function, enter May 24, 1937 and May 24, 1987 to find out just how many days the Golden Gate will have linked San Francisco to Marin on its upcoming 50th anniversary (18,250 days). Or analyze the feasibility of buying a condo perched at the foot of the Sierras with the "real estate" function. Simply fill in the blanks to determine such variables as the amount of the loan you need, the annual interest on the loan, or the number of payments. Try the metric-conversion calculator to convert distance, areas, weight and volume measurements. It's 39,360,000 centimeters to Kalamazoo, the celery capital of Michigan. These are just some of the possibilities.

So far, it appears that there's nothing similar to the *18C Financial Consultant*, for professionals and non-professionals alike. So why hasn't anyone else put a comparable product on the market before? "I guess you could ask the same question to Borland when they first put out *Sidekick*," Schulof reasons. "No one has ever thought of it."

The Financial Consultant is one of two products currently available in the ALS "Cloneware" series—software "for the PC/XT/AT compatibles and the IBM too." "About a year ago we decided we wanted to make a heavy impact into the IBM world," says Schulof of ALS, which has been an Apple company since its inception in 1980. "But we also felt that the IBM world was a very large world and very professional. We knew that whatever products we would come in with better be top notch." The result: Cloneware. IBM software packages which offer power, ease of use, and affordability for the growing needs of clone users. "What we want is for the computer to relate to the end-user, *not* the end-user relate to computer."

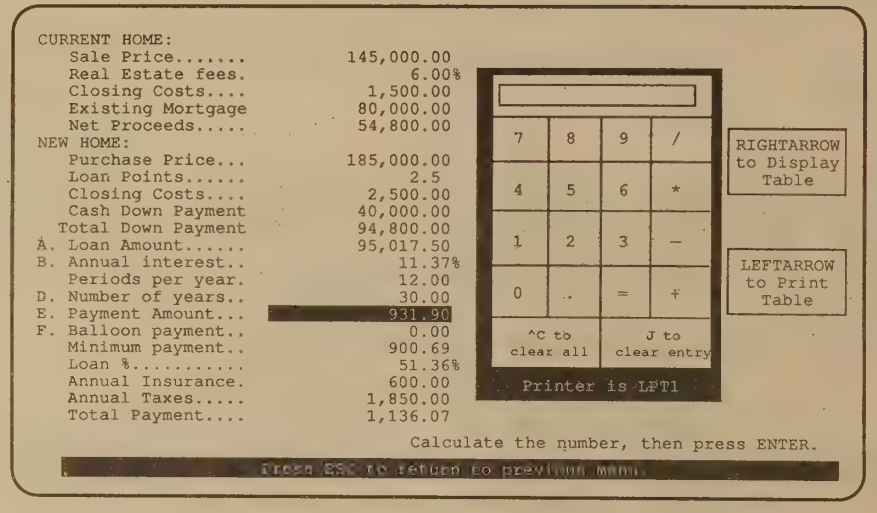
DeskTalk, a menu-driven memory-resident desk organizer, is the other Cloneware package available now. Besides the calendar, rolodex card filer and phone dialer, *DeskTalk*'s real conversation stopper is its telecommunications package which, among other things, permits the PC to emulate up to five different terminals.

ALS has plans to introduce four additional Cloneware packages in the next few months. One of them will be a utilities program with a screen saver, a keyboard recorder, a keyboard player and other useful stuff called *Nathan's Utilities* (named after you-know-who).

Not that ALS is abandoning Apple. Schulof is quick to point out that ALS is still an Apple company, with a healthy variety of Apple products on its shelves. "We have no intention of leaving the Apple world behind us. We plan to continue strongly with sales and development." As evidence, Shulof reports that ALS will offer a new hardware board for the IIGS later this year.

Indeed, Apple is in part responsible for the fact that ALS opened its doors in the silicon-shuttered community of Sunnyvale seven years ago. If Apple hadn't told employee Chuck Morrow to forget about his idea of creating an 80 column card, Morrow would never have knocked on lawyer Grant Jazzman's door seeking free legal advice. "Jazzman said to Chuck, 'Why don't you try to get a release from Steve Jobs to build an 80 column card, and then we'll start our own company?' thinking that would be the last he'd see of him for a year or so," Shulof explains. "But the very next day, there's Chuck at the door with a signed release in his hands." Though Morrow is no longer with the company, Jazzman is still president and ALS still manufactures an 80 column card for the Apple II called Smarterm.

Schulof forecasts that 1987 could be a big year in the history of Advanced Logic Systems. "The '87 marketplace will see a lot of changes in ALS. We've been a quiet company over the past two years," he says. "I personally believe that to develop good software takes a minimum of a year, sometimes two. We have eight to ten products we've been working on that are just coming into position now." (Advanced Logic Systems, 1283 Reamwood, Sunnyvale CA 94089, 408/747-1988.)



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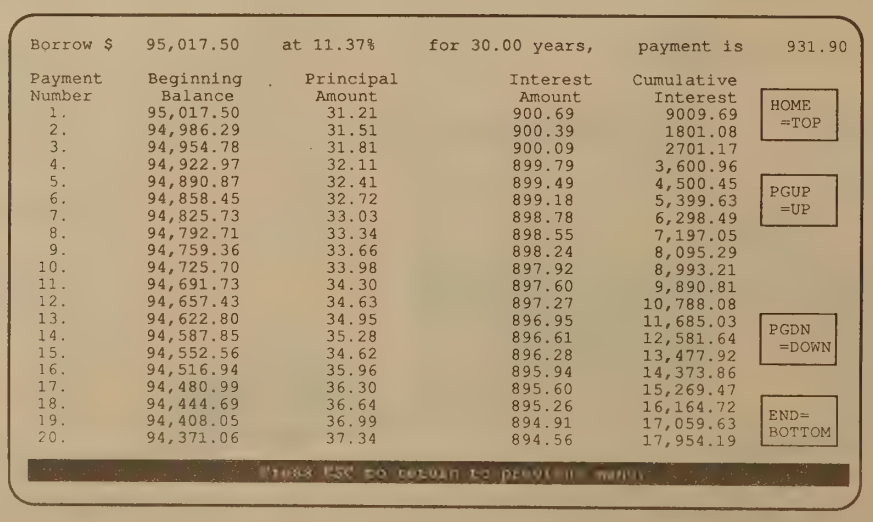

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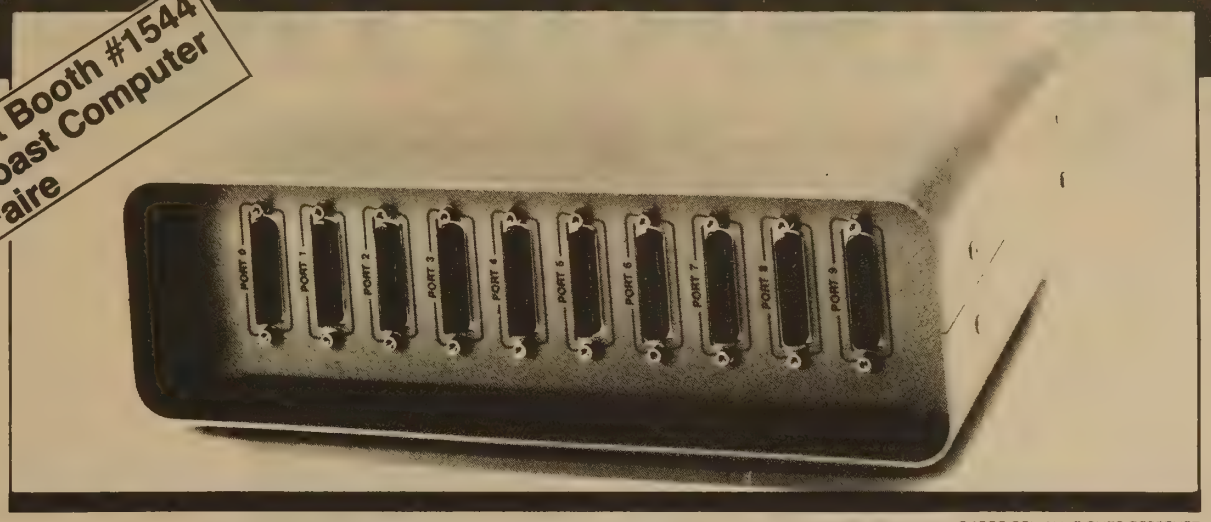

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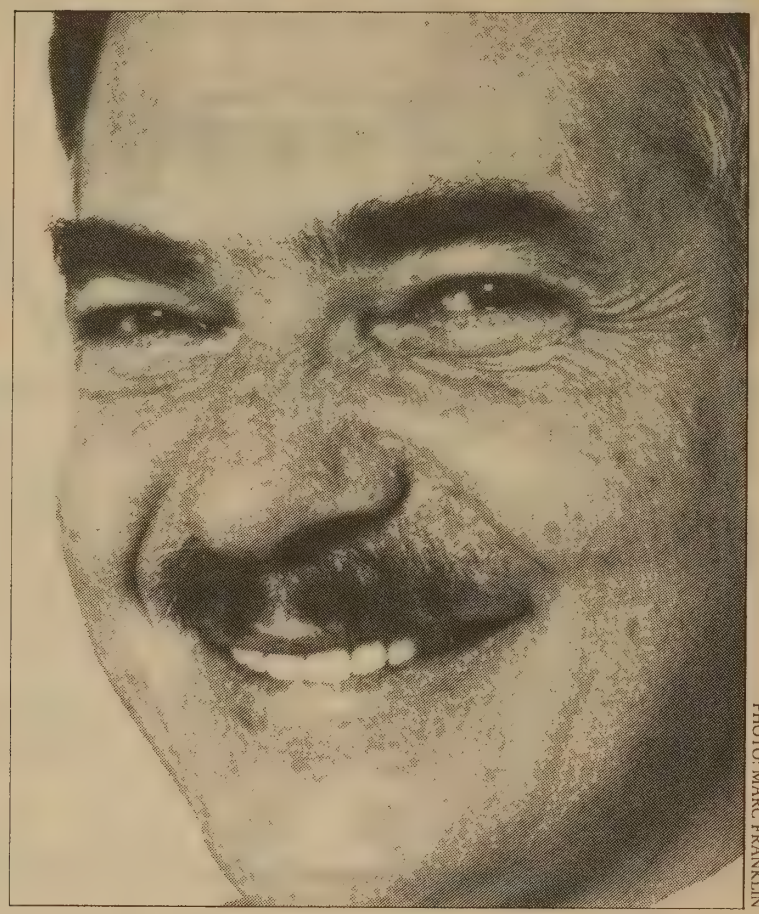


PHOTO: MARC FRANKLIN

On Software

Maverick entrepreneur Adam Osborne holds forth on pricing, copy protection, industry standards, "look and feel," and other crucial issues.

By Mary Eisenhart

"While imitation is the sincerest form of flattery, in this case, it happens to be the sincerest form of theft as well."

—Jim Manzi, President and CEO, Lotus Development

"Suing your competition is generally the last resort of a company that is rapidly losing its lead in the marketplace."

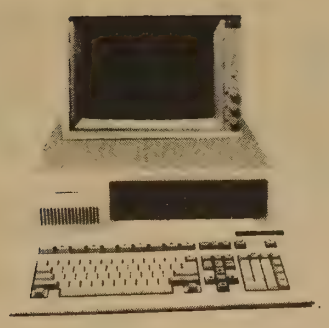
—Adam Osborne, President and CEO, Paperback Software

No stranger to controversy, Adam Osborne currently finds himself, or rather his company, Paperback Software International, embroiled in a landmark legal dispute with Lotus Development Corporation. The issue—whether PSI's *VP-Planner*, a *Lotus 1-2-3* compatible spreadsheet package, and *The Twin*, another *1-2-3* lookalike from Massachusetts-based Mosaic Software, unfairly copy the "look and feel" of *1-2-3*, the best-selling spreadsheet package in the PC world.

Osborne, who had previously founded Osborne Associates (later Osborne/McGraw-Hill) and Osborne Computer, started PSI in late 1983. Paperback Software's initial releases were low-cost ($19.95-$69.95), fairly generic applications which sold decently but unspectacularly; its emergence as a serious contender in the software marketplace dates from the mid-1985 release of *VP-Planner*. Now in Release 1.34, *VP-Planner* adds database capabilities to its Lotus-compatible interface, retails for $99.95 list compared to *1-2-3*'s $495, and has been chosen over *1-2-3* in some important corporate and government sites.

On January 12, Lotus filed suit against PSI and Mosaic in US District Court in Boston, charging copyright infringement, false advertising and unfair trade practices, and seeking $10 million damages from each company. At the same time, Lotus sought an injunction prohibiting sale of both *VP-Planner* and *The Twin*.

While nobody knows exactly what prompted Lotus to bring suit after *VP-Planner* had been on the market



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for 18 months (or why PSI and Mosaic were chosen from a host of Lotus-workalike publishers), most observers agree that the decision was at least partly motivated by two recent court cases. The US Supreme Court declined last year to hear an appeal in the case of Whelan Associates Inc. vs. Jaslow Dental Laboratory Inc., thereby letting stand a lower court decision that Jaslow's PC-based dental management system was indeed a copy of Whelan's mainframe-based program. The lower court had held that the structure and organization of software are protected by copyright.

Further, in a closely-watched case in San Francisco, the US District Court decided last fall that Unison World of Berkeley improperly copied the menu screens, input formats and sequence of screens in Brøderbund Software's *Print Shop* in its *Print Master* product. In his decision, Judge William H. Orrick maintained that the "look and feel" of a software product was covered by its copyright—a doctrine that's been hotly debated by software publishers and industry analysts ever since.

PSI and Mosaic have joined forces to fight the Lotus suit (one oft-expressed theory is that industry-leader Lotus has far better resources to sustain the ravages of a protracted legal battle, regardless of eventual outcome). Meanwhile Osborne maintains that *VP-Planner* simply builds on the Lotus standard and creates an improved product, much as Lotus itself improved on earlier products, and that adherence to an industry standard such as that defined by Lotus is not only necessary to sell software, it's what has made rapid progress in the microcomputer industry possible. A master of drama and rhetoric who chooses his words carefully but rarely minces them, he issues ringing statements of determination to fight and triumph—e.g. "Lotus has decided to put their efforts into litigation instead of product development. We do not feel that any of their claims are valid, and we intend to vigorously protect our right to offer innovative new products that conform to widely accepted business standards. Their goal is to eliminate the alternatives to their products. Our goal is to improve on features, price and performance. *VP-Planner* is a better product at a better price, and we are glad that Lotus has given us this opportunity to prove it in court."

In PSI's Berkeley headquarters, Osborne discussed the company's history and plans, its formula for success, and the implications of the Lotus case.

What led you to start Paperback Software?
My idea was that software prices were going to come down, along with hardware prices. They *had* to come down.

There were two ways in which I could bring prices down. The first one was by *not* developing software in-house, but by getting software from outside authors who'd developed it using sweat equity. And the other was by manufacturing products with lower cost of goods, not sticking them in linen boxes with three-ring binders and stuff like that. There's no other industry I know of, outside of women's perfume, that goes out of its way to increase the cost of goods on the product. Software can hardly be classified in that category. What has to work is what costs the least. So that's what I did.

That part of it was fine. Initially I was also of the opinion that we would do well with PFS-type software, which is to say that most people I knew had never used more than 10% of *WordStar*. So give them a product which gives them everything they routinely use, charge less for it, and they'll love you for it because the interface is so much easier.

That proved to be wrong. In fact, interestingly enough, in the marketplace today, the products that sell well have to be feature-laden. People will always go for the option that does a hundred things that they'll never use, as compared to the one that's much easier for them to learn and use.

Why?
I don't know. But it's the way it is. Our early products, such as *Paperback Writer* and *Number Works*, would satisfy the needs of between 50 and 70% of the marketplace, but weren't that successful. Software Publishing [publishers of the PFS series] found out the same thing for themselves shortly thereafter, and had a disastrous time of it for awhile.

The products that proved very successful were the VP series. I was really looking at two lines of products —a high-end line and the low-end line. The high-end line took off right away.

VP-Planner was the first of the high-end line. I seriously doubt that there's more than a handful of people in the country that really can use all of the capabilities of *VP-Planner*. I mean, it's way beyond *Lotus 1-2-3* in terms of its capabilities. It is to *Lotus 1-2-3* as *Lotus* was to *VisiCalc*, yet it is selling like hot cakes.

What kind of features do you look for in a product?
When we design a product we look for greater functionality and ease of use as compared to what's already on the market. A lower price on its own is not enough. To come up with a product that is as good, or almost as good, but a lot cheaper, doesn't work, as we found out early on. You've got to offer a package that does things other people can't do, or does the things other people can do, but easier, *and* be cheaper, you see.

In the market the VP series is aimed at, is ease of use a crucial factor?
Oh yes. Ease of use is a crucial factor, and that comes in two ways. One, by conforming to standards that people already know and understand, and two, by being intuitive, not having three steps where one would do.

If you are dealing with a *Lotus* user, or someone who is trained in *Lotus*, you really have no choice but to conform to that instruction sequence which has evolved into *Lotus*, the *VisiCalc* instruction sequence. You really have no choice, because the costs of retraining would be horrendous.

This industry has always gone to standards. Where would we be today if we didn't have the IBM PC standard? We'd have dozens and dozens of different and completely incompatible computers, and the software industry wouldn't have gotten off the ground, because anything we did we'd have to replicate ten times. It just doesn't work that way.

Do you have a pre-existing idea of what kind of software you're looking for and then go shopping for it?
In some cases yes, in some no. *VP-Planner* was brought to us, and we looked at it and said, wow, this is one heck of a product. *VP-Info* [a relational database package] was brought to us. With *VP-Expert* [a $99.95 expert systems package], I had said this is what I want, find it.

Who is likely to use a package like VP-Expert?
Expert systems, initially, were very high priced, which meant that people only used them where nothing else would do. If you had to pay $5000 for an expert system or $500 for a database, you'd use the database.

In fact, expert systems will do most of what a database program will do, in addition to having this kind of logic and things. Our price is so low that the expert system will appeal to anyone who's putting together dialogue kinds of query programs for use by anyone else within a company. If you want someone to go down a checklist of items, to make sure the new employee being hired conforms to all the state, federal and company regulations, or you go through the rooms of an office and make sure each one conforms to all fire codes—checklists, questions and answers, things of that kind, are much easier to generate using an expert system than anything else. Any kind of program that involves dialogue with the user.

The advantage of an expert system is that with a database, it's much more difficult to do. With a spreadsheet it's almost impossible. If you present the user with a dumb form which they fill up, and if, based on what they entered on question two, they should be doing something totally different, that's very difficult to program in a spreadsheet. It can be done in a database, but it's not that easy. In an expert system it's a snap, because that's what it's set up for.

How are you managing to sell it for such a low price?

"This industry has always gone to standards. Where would we be today if we didn't have the IBM PC standard? We'd have dozens and dozens of different and completely incompatible computers, and the software industry wouldn't have gotten off the ground."

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In most cases, the key to successful computerization lies not in the hardware, but in the supplier.

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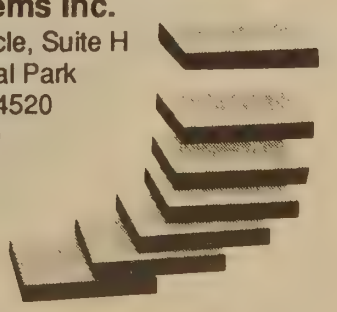

Authorized Value Added Reseller

"Lotus themselves, when they came out with 1-2-3, understood that the market out there belonged to VisiCalc, and if you told people they had to learn anything from scratch again, they weren't going to be very happy with you. We saw absolutely no indication that there was anything wrong with taking the path of VisiCalc to 1-2-3 and extending it further."

For the most part, the Artificial Intelligence community have perpetrated one of the greatest hoaxes on the industry that I've ever seen, in view of the fact that AI type programs are actually relatively trivial pieces of software compared to a lot of the other things that are being sold. *VP-Planner* is a *far* more complicated program than *VP-Expert* or any of the expert systems that I've seen yet.

Now *VP-Expert* goes a step beyond most of the others in that it is totally integrated with a database and spreadsheet. You can manipulate spreadsheet programs—*1-2-3* or *VP-Planner*, or d*BASE* or *VP-Info*—using *VP-Expert*, which can then become an intelligent front end to any of those applications. Even with that, it is still a much simpler program than either *VP-Planner* or *VP-Info* in terms of the amount of code in it. It's a relatively powerful expert system when stacked up against the one or two $5000 expert systems currently being sold on the market.

So what is your pricing structure based on?
Cost of goods. And any company that can make 60 to 65% gross margin is in good shape.

If you're doing so well selling low-cost software, why is Lotus still charging hundreds of dollars for its product?
First of all because it *can*. Because people are dumb enough to pay the price.

And second of all because they're now burdened with overheads that we wouldn't *dream* of getting. I mean, they've got programmers coming out of their ears. They do a lot of their programming in-house, to develop products that, frankly, never sell. They finish up buying products from the outside, which they then introduce as their future product—which is neither here nor there, except that those people are *there*. They've got 800 or 1000 people on the *payroll* at Lotus.

How many do you have?
Thirty-five. It's a bit of a difference.

When you develop your software in-house you burden yourself with a *horrendous* expense, because whatever those programmers do, you pay. Now the best programmers won't work for another company. They're all free-spirited people, they're not the kind that want to go in and work 9 to 5, or midday to midnight or whatever the time may be, for a paycheck, when the alternative is that they could go work for themselves, come up with something that makes money, and from that point on they continue to develop the product and keep going.

We're way ahead of any company that's doing it in-house. We have total control—100% of their revenue comes from us so they do exactly as we tell them. They work at home or among themselves doing what they love to do, which is program; they don't have to market, they don't have to do any of that stuff. They're all happy.

Are they paid on a royalty basis?
Yes. But we pay them a royalty based on cash received, so from a cash flow viewpoint we're in great shape. We don't have to start paying for new products two years in advance of ever getting any money back. And that royalty goes into our cost of goods, so when I say I'm getting 60 or 65% gross margin—which is public record, you can get our financial statements since we're a publicly traded company—that is actually better, a bigger gross margin than a Lotus or an Ashton-Tate would report, because our cost of goods includes the royalty, which in their case is in their R&D budget, which comes after gross margin.

When VP-Planner first came out, how did you perceive it with regard to 1-2-3? Obviously there's some resemblance, or Lotus wouldn't be suing now...
Absolutely. The thing is, Lotus themselves, when they came out with *1-2-3*, understood that the market out there belonged to *VisiCalc*. And if you told people they had to learn anything from scratch again, they weren't going to be very happy with you.

Now with *VisiCalc*, you didn't have macros, you didn't have templates and things like that—those were add-ins to be in *Advanced VisiCalc*, which never saw the light of day. It's not very well known, but in fact the people who designed *1-2-3* were beta testers for *Advanced VisiCalc*, and got a lot of their ideas from it.

Now, at that time, we saw absolutely no indication that there was anything wrong with taking this path of *VisiCalc* to *1-2-3* and extending it further. In the manual we make no attempt to hide the fact that we're keystroke-compatible; you *have* to be, it's an industry standard product. We've had government contracts being let that specify, not *Lotus 1-2-3*, but all the keystrokes of *Lotus*. It's a *requirement* to bid the government contract, you see.

Yes, we made the product keystroke and file and macro compatible, as far as that went, but from there we built. We built all of our database capabilities and additional spreadsheet capabilities, and we came out with a product that's done very well.

What does it do that Lotus doesn't?
I could go on with features and features, but the major thing it does is that it has real access to a database. Spreadsheets tend to get very large and very slow, because the data the spreadsheet uses must sit in the spreadsheet. You may only want one little piece of one operation, but everything has to be there.

Now in our case, we can keep our data either in *dBASE* files or in a multi-dimensional database. And the multi-dimensional database is a device which, one way or another, most people use when they use spreadsheets. For example, any time you do a budget, you're doing time vs. budget entries by department—three dimensions. If you're going to do a revenue forecast you're going to do time vs. account entries by product line and distribution channel—four dimensions. You start putting that into a spreadsheet and before long it goes from here to Timbuktu. You need an AboveBoard and a cup of coffee while it recalculates. In the case of *VP-Planner*, all that stuff sits out in a database on disk. You bring the little bit you need into the spreadsheet that does one job, then you bring in another spreadsheet for the next job. So the 500,000-byte *Lotus* spreadsheet, when you go to *VP-Planner*, it breaks up, and it becomes a big database on disk, which is not in memory. And then—dozens of little spreadsheets, none of which take long to execute, each of which does one job.

VP-Planner is capable of handling dBASE files, but the mutli-dimensional database is contained within the software itself?
That is correct.

Now comes VP-Info which is a freestanding database. How does it relate to VP-Planner?
Well, *VP-Info* files can be read by *VP-Planner*. *VP-Planner* will read *dBASE* or *VP-Info* files. *VP-Info* will read *dBASE* files or its own format. *VP-Info* would look very familiar to a *dBASE* programmer, but it is far more powerful.

First of all, *dBASE III* is not the universal standard in the database that *1-2-3* is in the spreadsheet. Second of all, it's a truly crummy language, whereas *1-2-3* is actually a pretty good spreadsheet. We can think of no good reason why we should try to perpetuate *dBASE III* as something the industry should keep using. Over a period of time they're going to demand a more powerful, versatile, capable language. We realize it's a longer, slower haul, coming in with something that's different, but in the end we know we'll win, because it's a much better language.

How much would a person that was reasonably familiar with dBASE have to re-learn?
A day or two. And a lot of our features they'd love, because we give them one programming statement to do what might take them a page or two of programming in *dBASE*.

What would be the advantages of making the switch?
Much faster program generation. We find that a lot of people who've got *dBASE* and *VP-Info* continue through habit using *dBASE* for major tasks, but if they want to whip anything together quickly, they'll go to *VP*.

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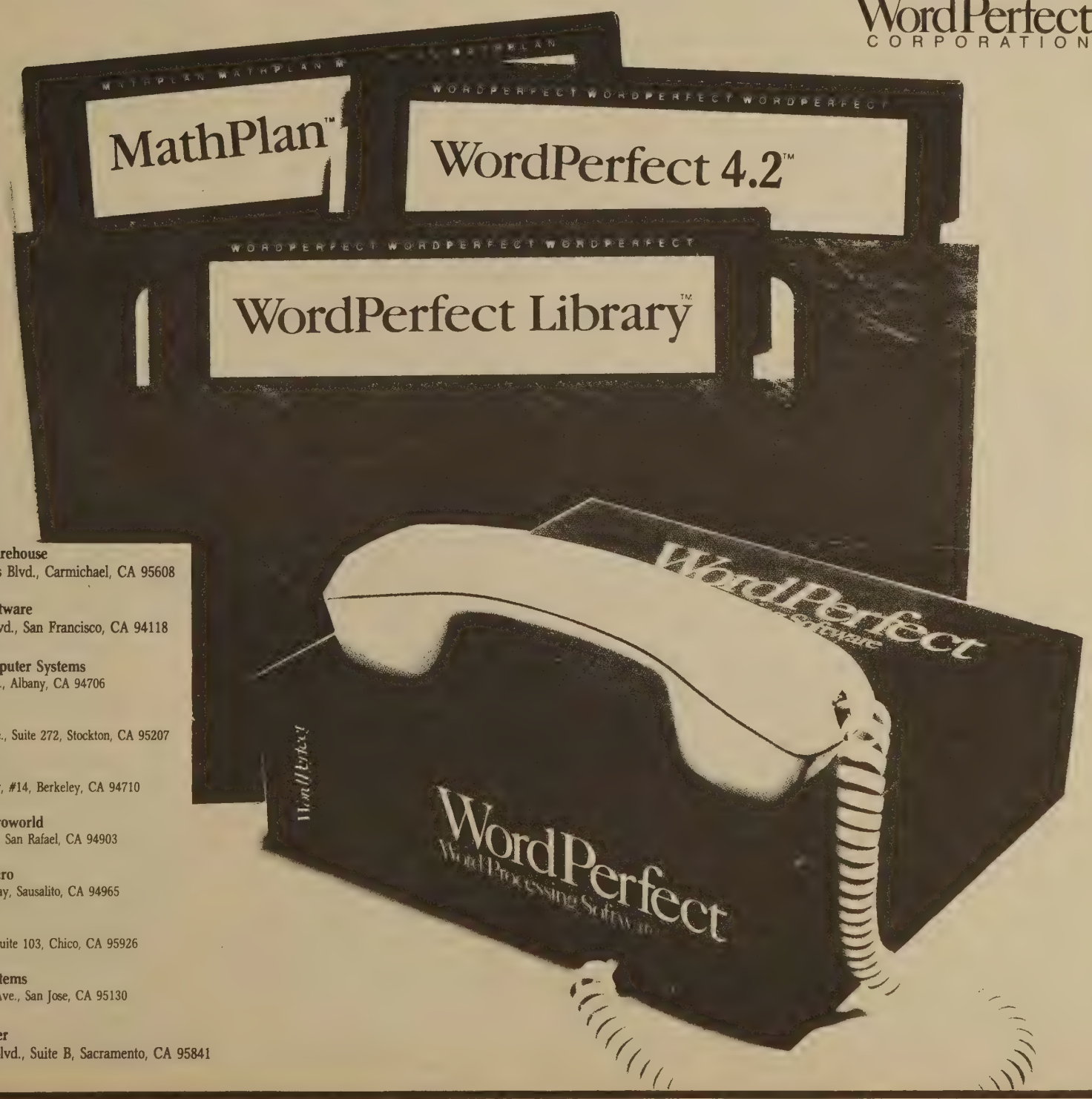

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"The law in this country is, next to the Mafia, the most disastrous part of our society. I think most lawyers can be classified as gangsters, in terms of their ethics and mental attitudes toward what they're doing."

Do you envision having a full line of business products that talk to each other?
Yes. We've already talked about coming out with a graphics package. We'll have all of the others.

Who are your customers?
At the moment I would say they tend to be smaller companies and individual business people. However, we're making steadily greater inroads into the corporate market. I think we've got a minority of the Fortune 1000—a lot of them are still buying *Lotus*. I think we've got the majority of low-cost clone buyers.

Why are the corporate buyers who are still buying Lotus doing it?
Inertia. It's what they've done in the past.

And there's another problem, you see, in that a lot of them, if they get *VP-Planner*, that's all well and good—*VP-Planner* can run any *Lotus* worksheet, but *Lotus* cannot run any *VP-Planner* worksheet. The thing is, people who get *VP-Planner*, being human beings, are going to start using *VP-Planner's* additional capabilities. The moment they've done that, they have spreadsheets which are incompatible with *Lotus*. At that point, the company needs to go back and clean out all the *Lotus* spreadsheets and replace them with *VP-Planner*, or they have two standards in the company.

They don't like that. And so until they see the overwhelming advantage of *VP-Planner*, a lot of MIS people are reluctant to see it come in at all.

You've had some major sales to government.
Yes, the Department of the Treasury has gone with us rather than *Lotus*.

Did they say what their reasoning was?
They liked our features more, we had a lot more to offer. Our price was better, and we offered them un-copy protected software, which at the time Lotus didn't do for anyone. Now they do for the government, but no one else. NASA buys *VP-Planner* also. They're the two major buyers.

Your ordinary customers, though, don't get non-copy protected software...
That is correct, and it's a legal issue. It's not that we have any problem with them having non-copy protected software; in fact, for $10 they can get a non-copy protected disk. The issue is that the law in every state of the union is very ambiguous regarding boxtop license agreements. No one ever signed that agreement that says if you buy this, you can only use it for whatever reason. They didn't sign that agreement. That is not an enforceable agreement.

It has been determined that it is not enforceable?
It has never been determined to be enforceable. You see someone coming along attempting to change the law on us the way Lotus is trying to do—Lord knows any day some smart lawyer is going to come along and say that that boxtop license agreement is not legal, anyone who bought that software can do anything they like with it. And they may win. So what we do is say, fine, give us a signed license agreement and we'll give you the un-copy protected software. So every book contains a license agreement; sign it and send it to us with $10 and we'll send you the un-copy protected software. That to us is eminently fair; it legally protects us and, for a nominal charge, gives our customers what they want. And we frankly haven't had any complaints about it.

We're not that worried about the day-to-day, run-of-the-mill copying. What we're worried about is all of a sudden some landmark lawsuit coming along and saying that the boxtop license agreement is invalid. If the federal government would come out with a law that said the boxtop license agreement on software was valid, we'd drop copy protection tomorrow. In the meantime, we've been bitten, we're twice shy, so what we would need to do is worry about the legality of the boxtop licensing agreement and find some easy inexpensive way for people to get un-copy protected software while leaving us in good shape with the law.

Your reasoning seems eminently sound, but Bill Gates [of Microsoft] is nobody's fool either, and he dropped his copy protection...
One of these days he may wake up with a nasty shock. We are a new industry. We have new problems. The laws that we're working by were not written with us in mind by people who understood our problems.

The legal climate is pretty ambiguous right now.
Well, you know what I've always said is that in this country lawyers are the sand in the machinery of our industry. The law in this country is, next to the Mafia, the most disastrous part of our society. I have dealt with lawyers and been involved in a certain amount of litigation, particularly around Osborne Computer Corporation, and frankly I think most of them can be classified as gangsters, in terms of their ethics and mental attitudes toward what they're doing. They're amoral people who really care about nothing except playing a game which is of no value to society whatsoever, mostly only of value to lining their own pockets.

But that's what we have to put up with, you see, it's the way it is. They've got it very nicely set up at the moment—for themselves. It is one of the most ruinous, wasteful sections of our society.

What are your feelings about the Brøderbund/Unison case that started all this?
At this point my lawyers have been very explicit that it would not be a good idea for me to comment on the merits of any kind of a lawsuit. I would say this much, though—I have read carefully Judge Orrick's opinion, and based on Judge Orrick's opinion, I feel that we would win, that Judge Orrick's own opinion would find for us against Lotus.

It seems to me that there are some fundamental differences in the two cases.
Absolutely. Because what Judge Orrick was talking about in his opinion was a virtual pixel-by-pixel copying of a Brøderbund product by Unison when there was no good reason for them to copy the Brøderbund product, for marketing or any other purpose. They just did it exactly the same, you see.

But on the strength of that, Lotus has decided to sue you and one other company.
I don't know whether it's on the strength of that, I don't know why. It's a matter of public record that Lotus has sued my company and one other company.

At the time that Lotus filed the lawsuit, my reaction was—I am ecstatic, I'm dancing off the roof, I didn't think that Lotus could be so foolish. And this morning in the *New York Times* Mr. Sanger reports that some senior Lotus executives admit privately that they have been rather amazed by the reaction to the lawsuit. I am not. I think that they were foolish to do it, I am sure that we will prevail, but beyond that there is not much I can do or say about the case.

I *can* say that I am just overwhelmed by the level of support we have been getting from users. The industry is 100% behind us. That's absolutely clear.

What do you see as the case's effects on the industry as a whole?
In terms of effects on the industry—I think it was Dan Bricklin [co-author of *VisiCalc*] who talked about Vonnegut's Ice-Nine [in *Cat's Cradle*, a variant form of ice that froze at room temperature and ultimately produced the end of the world]. I think that comes pretty close to the truth. If Lotus were to prevail, the software industry would go into the Dark Ages of having a few companies monopolizing segments of the software market, and bringing innovation about as fast as AT&T brought in new telephones when they had a monopoly on telephones.

How does this issue relate to the issue of IBM's BIOS on the PC, in which it was unable to prevent the manufacture of clones?
Well, I would say that if Lotus were to prevail, that IBM could use the same argument to protect its BIOS, and it would be the end of...Well, I'm not sure it would be the end of clones, because three years have pas-

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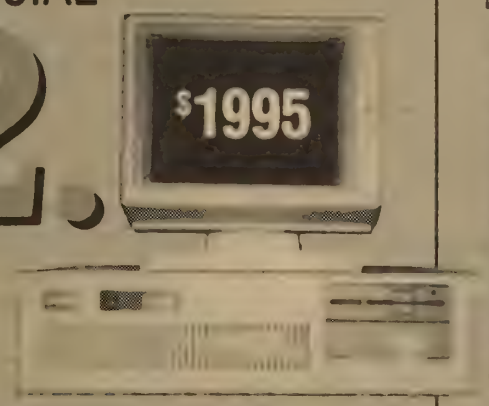

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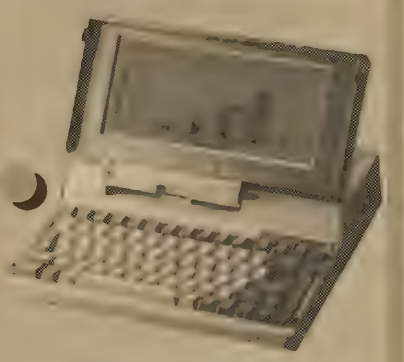

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"If Lotus were to prevail, the software industry would go into the Dark Ages of having a few companies monopolizing segments of the software market, and bringing innovation about as fast as AT&T brought in new telephones when they had a monopoly on telephones."

sed since the first IBM BIOS got copied, and there's a three-year statute of limitations in this country.

What IBM would likely do, though, is make some changes in the BIOS, copyright the changes, and then attempt to establish a new standard which nobody could clone. Now whether or not they'd get away with it at this point, whether the standard is bigger than the company or not, is anyone's guess. But you could go back and say that had the Lotus argument been enforced back in '81 and '82, there would be no clone business today. There would be no copying of IBM PCs. And we would have no standard.

So having standards is good for the industry.
Absolutely. It's the way the whole industry began. You can go from the very beginning. The first microprocessor, the 8008, copied the instruction set of a minicomputer, the DataPoint 2200. The 8008 gave rise to the 8080A, the 6800, and the 6502, all three of which were enhancements of the 8008. The 8086 and the 8088, plus the 68000, were enhancements in turn of the 8080A or the 6800. The Z-80 was a straight upward enhancement of the 8080A.

When you got microcomputers coming along, the first was from MITS, the Altair. The Imsai was an exact reproduction of the MITS, it was absolutely compatible. It used the same bus. By having the same bus we got industry standard cards. Without those industry standard cards the industry would've never taken off.

Lotus has a very significant aftermarket of add-on products. How successful have you been...
But *do* they? They have a very significant number of people who've announced add-ons and add-ins. I don't know that there is that significant a dollar market that has emerged yet for those products. In specific areas where people have addressed real problems, yes; reducing disk file size has done well. *HAL*—how well it's going to do in the long run is anyone's guess. It's getting a lot of hoopla and play at the present time—whether it'll do that well in the future we can't know.

The add-ins—I'm skeptical. Is somebody going to spend $300 on a spreadsheet and then $3000 on add-ins, all of which should have been there in the first place and most of which you can get for your $100 in *VP-Planner* anyway?

How successful have you been in getting some of these third-party people to support VP-Planner?
A lot of the products that worked as add-ons with *1-2-3* will also work as add-ons in *VP-Planner*. Add-ins—we're not taking that same approach, quite honestly, because I'm not sure that's going to work. We believe instead you should continue to enhance the product and give people the same features for the same price.

What's the exact difference between add-on and add-in?
An add-on is a product that you use in addition that comes in from the outside and uses the file formats, etc. An add-in—you go in and actually hook it to code and use subroutines and capabilities within the product. The add-on does not—it comes in from the outside and uses the external capabilities. Add-ons that work with *1-2-3* generally work with *VP-Planner*. Add-ins cannot.

What impact do you see PSI as having had on the industry?
Well, we have had some impact in reducing prices, but we don't want to overplay that. Borland came out before us. We were well positioned is what I would say instead, in that we came in just before the massive production of very low-cost clones. When people pay $500 for their computer, they don't want to pay $500 for just one program.

Does the 386 open up any vistas?
Yes; we will be coming out with more sophisticated programs with more functions and more user interface and things like that. It allows much more enhancement of our products.

Is it a problem that there's essentially no standard operating system for it yet?
At the moment it is a problem, but I am certain that a standard will emerge rather quickly and that the standard will be upward compatible with MS-DOS.

Where do you see that standard coming from?
Hard to say right now. Microsoft obviously has the inside track. If they don't come out with something pretty quickly someone else's product—there are one or two out now—will take over.

But not IBM?
IBM has had a singularly unsuccessful track record with software, and I can't see that changing.

There's been some speculation that IBM's going to write off the microcomputer market entirely.
That would be tough for them to do, because that is the major market for all of the future. I would say that they're going to write off the low-end clone market, but I think you're going to see them playing aggressively in the high-end AT market.

There's also talk that their 386 machine won't be a micro in the current sense at all, but a server for multiuser systems.
Well, but I think you'll see a lot of other people doing that. The economic imperative for multi-terminal micros is quite real. It's a variation of the local area network—what you want to share is database files, and you might as well have this one thing in the center for database files. In fact the multiterminal micro is just another variation on the star LAN.

To what extent does your software support LANS or multiuser systems now?
VP-Info works on LANs. *VP-Planner* does also because of the fact that the database is not connected to the spreadsheet, and big spreadsheets get broken up into lots of little ones. Therefore you can be loading any one of the ones you want—the only problem is that *VP-Planner* currently does not provide record locking, only file locking, and when you get to multi-dimensional databases it's rather hard to figure how record locking could possibly work, because there aren't any such thing as records.

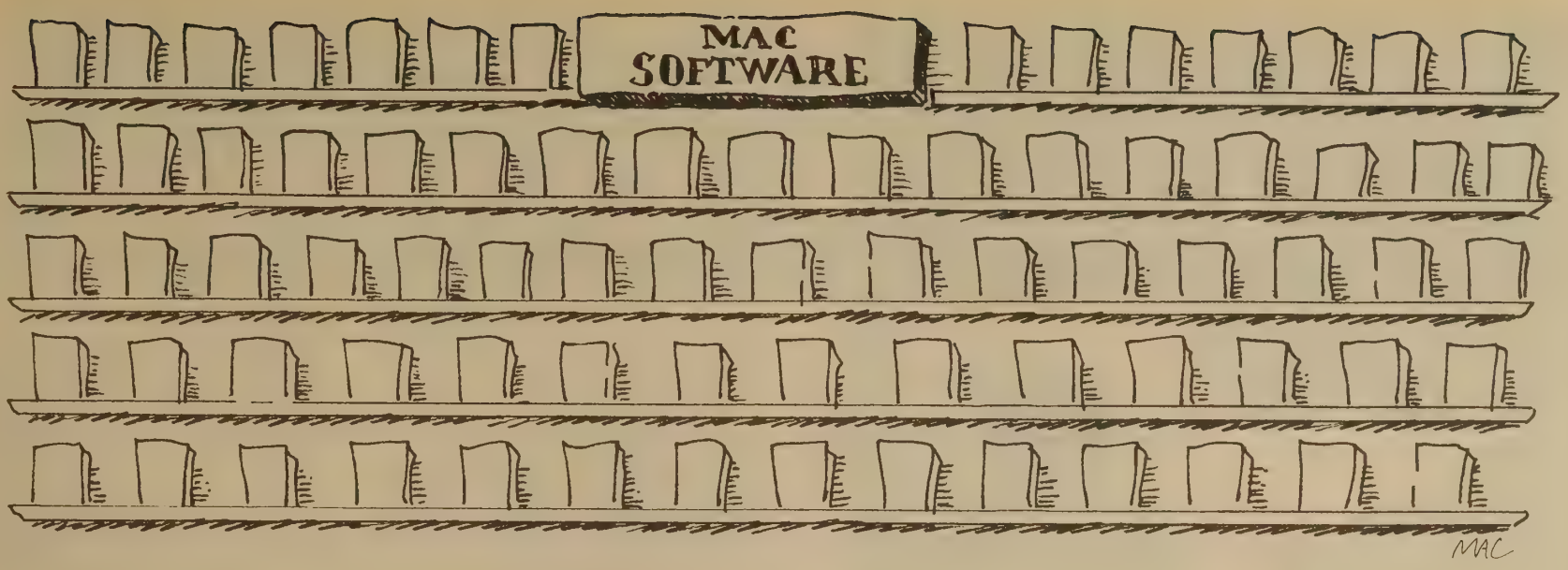
What types of license agreements do you offer to different types of customers?
We have LAN license agreements, we have corporate license agreements, we have educational license agreements—they're all different and tailored to the user in different situations. They're standardized—we can't have a different license agreement for every company we go to. The administration of anything like that would be a nightmare. But we are flexible in that each new type of requirement—if it's an industry-wide requirement, we'll come up with a license agreement. When LANs started to show up a lot, we came up with a LAN license agreement. We could have told them, here's our corporate license agreement, go buy a copy of the software for each terminal. They would say, well, that's not very satisfactory, because most of the time the terminals aren't in use, etc., etc. So we have a LAN license agreement.

Suppose someone wanted to market software successfully and looked around at all the dead bodies in the industry and wanted to avoid their fate. What should they do?
First of all, there have not been that many dead bodies among the software publishers. There've been a lot of dead bodies among people who wrote their own software and tried to build the next mega-corporation around it.

In terms of software publishers, I think that the major thing we did right was acquiring rather than developing software. We're beginning to see this all over the industry—Lotus is acquiring today more of its products than it's developing in-house, Ashton-Tate the same thing. So it goes. Microsoft is one of the few companies that continues to develop software in-house.

The other thing is get rid of the hugely expensive cost of goods. Three-ring binders and linen boxes are just not needed.

What did the people who tried to



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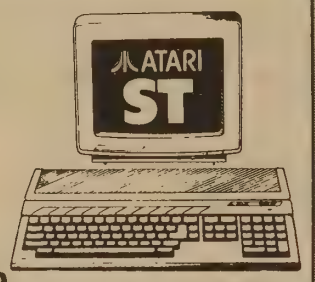

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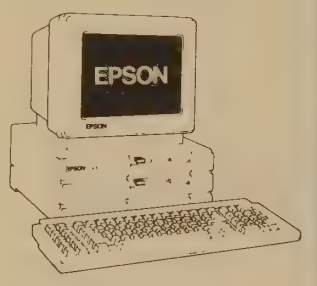

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build mega-corporations around their software do wrong?
They were unrealistic in terms of the revenues. You need a lot of money to keep an office open—to have an accounting department and a customer support department, all the other departments needed. If you've got one program bringing you revenues, that program has to be *wildly* successful for you to do that. *VP-Planner* would have been an unsuccessful product if it had been the basis for an entire company. Its revenues are insufficient to build a whole company around it alone, but put it together with a lot of other products, and it's a very successful product. It's the same as saying how successful would book publishers be if every author decided that his book would be so successful that he'd build a whole publishing company around it. It doesn't work.

You've just got to spread the overhead around a lot of titles. In the end, we see ourselves four or five years from now with 75 or 80 or 100 titles. And now you can afford all the various services you need within a corporation—if the cost is spread among that many titles.

How do you support your products?
We charge for our support—a dollar a minute with a $5 minimum. Now, the truth of the matter is that very, very few phone calls that come in ever get charged. The reason for that is that the frivolous phone calls never come in. People who know that there's a dollar a minute charge with a $5 minimum call once and get charged and don't call again. Or they read it in the manual and they don't bother to call in the first place. The result is that the people who do call usually have a genuine need for information, or what they're looking for is information that was not adequately covered in our manual. In both of those cases we do not charge.

We try harder. We spend the time to provide the information. But it doesn't matter how hard you try, somebody later on will stumble on things you didn't think of covering. So in general our policy is that if somebody calls in with an error in the product or something that's not properly covered in the manual, we don't charge.

How often does that happen?
Most of the time. We charge for very few of the calls, because the silly calls just don't come in. The real value of charging is that it scares away the stupid phone calls, rather than bringing us revenue.

We do feel a responsibility to provide legitimate support for legitimate questions. We do not feel a responsibility to support people who are too lazy to read the manual.

You've announced that the whole VP line will have Windows versions. Do you see Windows becoming a new standard?
Windows and compatible products. I'm not going to suggest that Microsoft will have the entire market to itself; I think they will not, because there are compatible products that we're looking at as well. But that metaphor, I think, is very viable. When you get machines like the 386 AT with one or two or three megabytes of RAM—640K machines don't interest me when it comes to *Windows*, because by the time you've loaded *Windows* you can get one application in and you're out of memory, so what's the point of having had *Windows*? But when you've got one or two megabytes of RAM, you can have *Windows* sitting in RAM, and out of various windows, the sizes of which you can increase and decrease, you can be jumping back and forth between your applications and transferring data. That's great.

Do you have any plans to eventually support operating systems other than DOS?
We're planning on it. We're planning to come out with an Atari ST version of *VP-Planner*, and we're also planning for *VP-Info* to have Atari ST, Mac and Apple IIGS versions.

What led you to choose the Atari ST?
I have a lot of respect for Jack Tramiel. Jack tends to make things work wherever he is. So I just waited a little while to make sure Jack really did have things under control there. He does, so then I went for it.

Now that the Mac has more or less arrived in the business world, do you plan on doing more development for it?
We will take another look at those products at this time. However, we're very busy. There's a lot of things that we are already doing, and unless we were going to go into some massive expansion, we could not really bring in a whole bunch of new products. We have a rather aggressive schedule as it is for this year, and I think that's about it, because if we were to bring in more products than we're planning on, the size of our company would have to grow to the point where we could not control it properly.

What niches do you think you'd like to get into that you're not doing now?
To make those kinds of comments now would be tantamount to pre-announcing products. I really don't want to participate in the vaporware business.

You don't, for instance, foresee hopping on the desktop publishing bandwagon at this point?
For us to get into that market right now, someone would have to come up with a pretty superb program and present it to us. Because right now it just wouldn't make any sense at all. There are a lot of very good products on the market, and we don't want to come out with another me-too product. There's just no point. □

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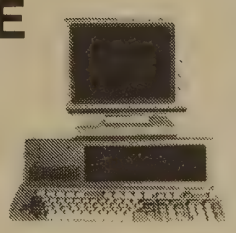

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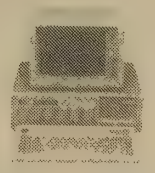

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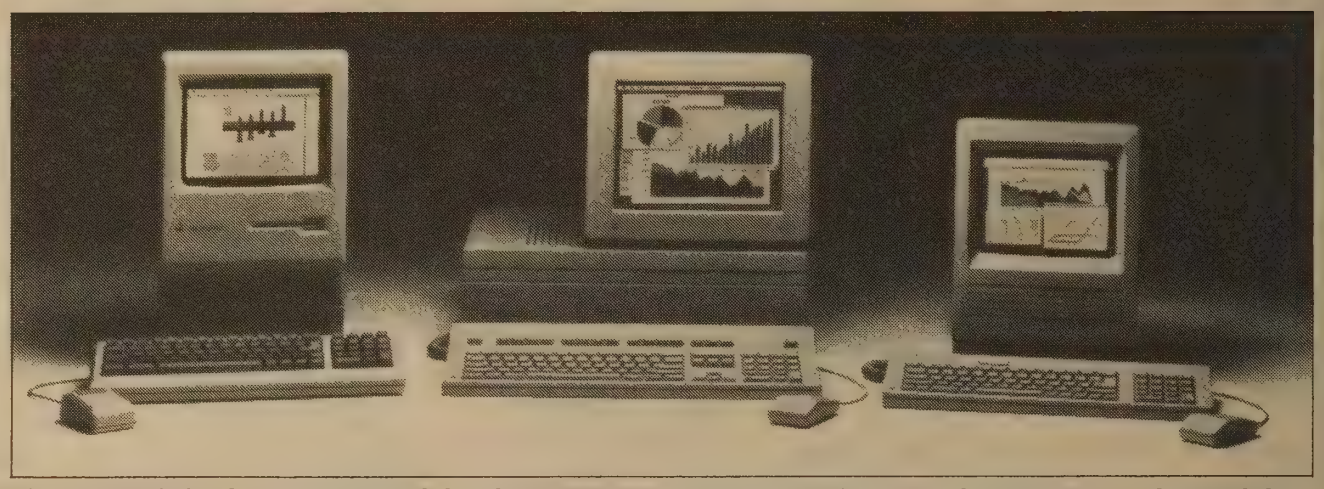
The New Macs— Power And Flexibility

By Robert Beauchamp

With the introduction this spring of the Macintosh II and the Macintosh SE, Apple Computer broadens its range of computers, with the purpose of strengthening and expanding its position in the business, government and higher education markets. The new computers are designed to offer the expandibility, power and accessibility these markets demand.

Apple now offers what it calls a family of personal computers. These include the top-of-the-line, high performance, open architecture Macintosh II, the expandable Macintosh SE and the entry level Macintosh Plus and Macintosh 512KE.



The Macintosh family now consists of (l-r) the entry-level Macintosh Plus, the open-architecture Macintosh II, and the expandable Macintosh Plus. The Macintosh 512KE, also an entry-level machine, is not shown.

THE MACINTOSH II

With the Macintosh II, Apple departs from the now classic footprint of the Mac. The II's low, box-like shape and detached monitor, combined with a longer multi-function keyboard, give it the look of a more conventional PC. The new modular design and open architecture allow for color displays and the ability to incorporate add-in cards from Apple and third party companies.

Apple has recognized the need to provide data file interchange with other operating sytems. It is therefore providing the Mac II with its own version of the UNIX system, which is widely used by universities, the government and technical professionals. It has also introduced *InterFile*, file transfer software that gives the Mac II MS-DOS data file compatibility.

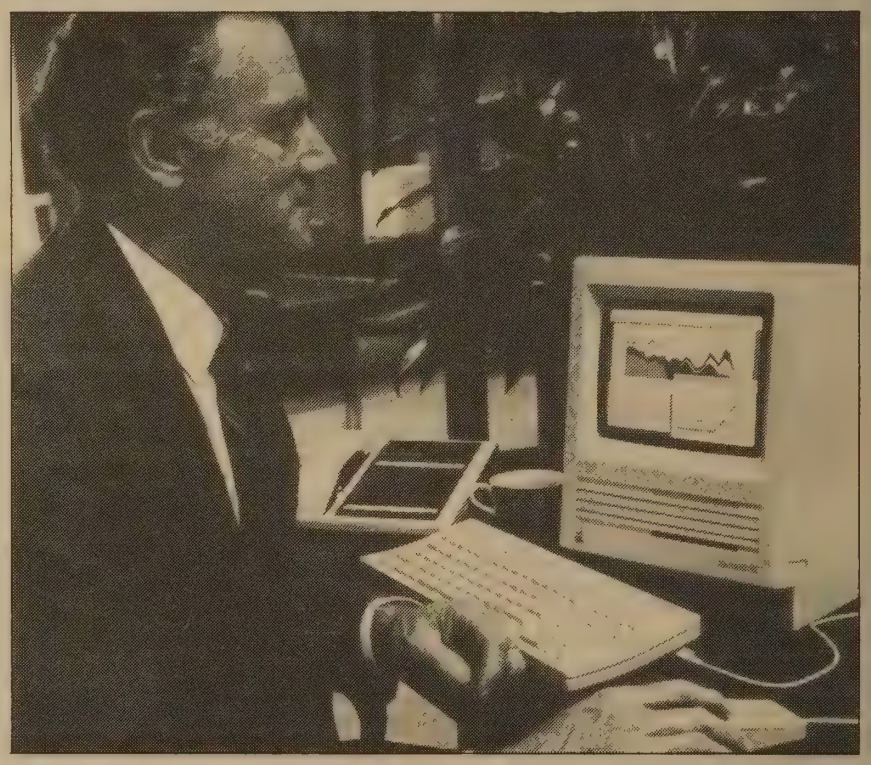
Compatibility is also the reason users may choose between two Apple keyboards. The Apple Keyboard provides a typewriter style layout, a numeric keypad and curser keys. The Apple Extended Keyboard also includes function keys and special purpose keys for using alternative operating systems such as MS-DOS.

Apple has included many features into the Mac II that are designed for advanced applications in business, desktop publishing, higher education and engineering environments. For those desiring greater speed, the Mac II is equipped, along with its 32-bit, Motorola 68020 microprocessor, with a floating point arithmetic chip, the 68881. This chip can perform mathmatical operations up to 200 times faster than the 68020. Together the chips let the Mac II process at a speed of two million instructions per second. The SCSI (Small Computer Systems Interface) port allows for transfer rates greater than one megabyte per second. Overall the Mac II operates most existing Macintosh applications up to four times faster than the Macintosh Plus.

To permit the fast transfer of large quantities of data between the add-on cards and the logic board, the Mac II includes six slots that use the high-performance NuBus protocols. NuBus features fair arbitration and geographical addressing which lets the add-on cards "identify" themselves. Therefore, there is no need to set DIP switches to configure a system. The six slots let the Macintosh II operate a wide range of applications and expand along with users' needs.

New 12- and 13-inch high resolution monitors are designed to meet word processing, spreadsheet and advanced graphics needs. The screens are capable of displaying the full width and over half the length of the page. The display units feature 640×480 pixel resolution and utilize an analog input format. With the graphics card and expansion kit the 12-inch monochrome monitor can display millions of gray values; the 13-inch color monitor can display millions of gray or color values.

The Mac II also provides 1 MB of RAM. It can internally accommodate, simultaneously, up to two 800 kilobyte floppy disk drives and one 20, 40, or 80 MB hard disk.



The Macintosh SE is expected to be the most heavily-used business Mac.

THE MACINTOSH SE

Apple considers the Macintosh SE (System Expansion) its mainstream system for most business and higher education uses. Unlike the Mac II, the SE keeps the traditional Mac shape. Its performance and flexibility, however, are greatly increased.

The goal of the SE is the same as that of the Mac II. It is designed to provide a flexibility and power previously unseen in the Macintosh. The internal machine design is completely new. It incorporates two built-in disk drives and an expansion slot called the Macintosh SE-bus. Expansion options available from third party companies include MS-DOS compatibility cards, communication cards, external video cards and performance acceleration cards.

Users may also expand the memory capabilities of the SE by up to 4 MB with a new 2 MB RAM expansion kit. They may also add external 40 or 80 MB hard disks to a system which already gives the option of either two 800 KB floppy disk drives or one 800 floppy disk drive and one 20 MB SCSI internal hard disk drive.

The SE offers the same keyboard option as the Mac II. Both units also offer an optional 40 MB SCSI tape backup unit which provides both file and image backup on preformatted, one-quarter-inch tape cartridges.

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SE. Along with the software, a 5.25-inch MS-DOS floppy disk drive and drive controller cards are available. This gives users abilities such as reading in a *Lotus 1-2-3* data file so it can be used in a spreadsheet program such as Microsoft *Excel*. Users who choose a coprocessor card from a third party can run *dBASE III* or *Lotus 1-2-3* in a window on the Macintosh screen.

Apple is also taking aim at the international market. Both the Mac II and the SE will be available in 15 localized versions in 10 different languages, including Japanese, Flemish and Dutch. The international models also feature a universal power supply that permits operation with all common voltage.

OPTIONS AND COSTS

As with any business decision, foreign or domestic, the potential customer will have to decide about the cost of a new Macintosh system.

A Macintosh II with 1MB memory, 40 MB hard drive, color monitor, video card and Apple Keyboard will retail at just under $7000. The basic Mac II with 1MB memory, 800 KB floppy disk drive and Apple Keyboard is $3898. In comparison, the entry level Macintosh 512K Enhanced starts out at $1699.

If Apple's predictions are correct, the most popular models will be the mid-priced SE and Mac Plus. The Plus begins at $2199. The SE price ranges from $2898 for 1MB memory, two 800 KB floppy disk drives and Apple Keyboard to $3698 for 1MB memory, one 800 KB floppy drive, 20 MB internal SCSI hard disk drive and Apple Keyboard.

These prices don't generally include the vast array of add-ons and peripherals that Apple is offering. An Apple External hard disk 80 SC costs $3199. An Apple PC 5.25-inch Drive for MS-DOS capabilities costs $399. Third party companies will also be offering thier own smorgasbord of products to increase Macintosh capabilities (and price).

The Macintosh II won't be available until May. Some of its features, such as the Apple version of UNIX, won't be available until summer. *InterFile* is also slated for summer release. The rest, however, including the SE, are available now.

Apple is hoping that the Mac's new power and expandability, when coupled with its vision of computers that are easy to use and take little time to learn, will be an irresistible combination to businesses, universities and government agencies. Apple already boasts that nearly two-thirds of all Macintosh computers sold today are sold to the business marketplace. They are hoping to expand this foothold and add to the impressive total of one million Macintosh computers sold to date. □

Third Party Products

Apple Computer has worked closely with third party companies to insure a vast range of high quality software and add-ons for the new Macintosh II and Macintosh SE. Here is a listing of over 30 independent companies that are offering new or enhanced products for the recently introduced Macintoshes.

Abvent (213/659-5157): *SpaceEdit*, a 2- and 3-Dimensional CAD software for engineers and architects.

Adobe Systems Incorporated (415/ 852-0271): *Adobe Illustrator*, an art production graphics package for producing high quality line art and illustrations.

Aldus Corporation (206/655-2200): *PageMaker 2.0*, desktop publishing software which will support both the Macintosh II and the Macintosh SE.

Ashton-Tate (213/538-7321): *dBASE Mac*, an advanced relational database management system, which will support the Macintosh II and the Macintosh SE.

AST Research (714/863-1333): Mac286, an 80286-based microcomputer that allows the use of MS-DOS applications on the Macintosh II; AST-ICP, a communications processor that increases system performance, speed and efficiency; AST-RM4, a memory expansion board that provides up to four additional megabytes of memory; AST-Pak, a memory expansion board which allows for the addition of Option Boards for system customization; Mac 86, an 8086-based coprocessor board that enables users to run MS-DOS application software on the Macintosh SE.

Authorware Inc. (612/941-5752): *Course Of Action*, a courseware design and authoring system.

Avatar Technologies Inc. (617/435-6872): MacMainFrame SE; A hardware/software communications product that connects the Macintosh SE computer to IBM mainframes.

Blyth Software Inc. (415/571-0222): *Omnis 3 Plus*, an updated version of the multi-user, programmable database.

BrainPower Inc. (818/884-6911): *StatView II*, a new version of the statistical analysis package *StatView 512+*, designed to operate on the Macintosh II.

Cricket Software Inc. (800/345-8112): *Cricket Graph* and *Cricket Draw*, enhanced versions of Cricket's color graphics software.

Dayna Communications Inc. (801 / 531-0600): DaynaFile, a 5-1/4" disk drive that allows the Macintosh to access IBM compatible files as though they were originally created on a Macintosh computer disk. Dayna also offers an enhanced coprocessor that allows IBM PC software applications to run on the Macintosh 512K or Macintosh Plus.

E-Machines (503/692-6656): The Big Picture, a 17" display, usable by the entire line of Macintoshes, that allows the viewing of an entire page or form.

Forethought Inc. (408/737-7070): *PowerPoint*, software that creates and manages business presentations.

General Computer (617/492-5500): HyperCharger 020, processor enhancement board that allows the Macintosh SE to run as fast as the Macintosh II; *HyperNet*, a file server software program that lets Macintosh users linked by AppleTalk share hard disk storage capacity, files and application programs; HyperDrive FX/40, an external 40-megabyte SCSI hard disk for Macintosh Plus, Macintosh SE and Macintosh II.

Great Plains Software (701/281-0550): *Great Plains Accounting Series*, a new version which uses the Macintosh interface while providing advanced accounting capabilities.

Kinetics, Inc. (415/947-0998) : EtherPort SE, an internal Ethernet controller board for the Macintosh SE.

Layered Inc. (617/423-9041): *Insight Accounting Series*, a new version which takes advantage of the larger screen and color capabilities of the Macintosh II.

Letraset (201/864-5600): *Ready, Set, Go! 3*, a desktop publishing program for the Macintosh SE and Macintosh II.

Levco (619/457-2011): Prodigy SE, a performance enhancement board that tranforms the Macintosh SE into a minicomputer-class workstation.

Lightspeed, Inc. (617/338-2173): Lightspeed offers a color desktop page layout system for designers, advertising agents and publications to be used on the Macintosh II.

Living Videotext (415/964-6300); *More 1.1c*, an integrated idea processor/presenter software package that has been upgraded from the 1.1 version to take advantage of the color capabilities of the Macintosh II.

Lotus Development (617/577-8500): *Lotus Galaxy* delivers six programmable business modules for the Macintosh II and Macintosh SE that meet daily business demands.

MicroGraphic Images Corp. (818/407-0571): MegaScreen SE and MegaScreen SE* M, expansion cards that give large-screen high-resolution display capabilities to the Macintosh SE.

Microsoft (206/882-8080): With the exception of a few minor maintenance releases for the Macintosh II, all Microsoft applications available for Apple Macintosh systems are fully compatible with the Macintosh SE and Macintosh II.

National Instruments (512/250-9119): *LabVIEW*, a software sytem for developing scientific applications involving instrument control, data acquisition, display, analysis and management along with report generation.

National Semiconductor (408/721-5000): National Semiconductor will be offering a 16-megabyte memory expansion module and a video enhancement card for the Macintosh II.

Peak Systems (512/328-0747): Orion, an upgrade board for the Macintosh SE that processes twice as much data as the basic Macintosh SE.

Personal Bibliographic Software, Inc. (313/996-1580): *The Professional Bibliographic System (PBS)*, a database and text management system that manages bibliographic information, references and abstracts; *Biblio-Links*, companion programs to *PBS*. Both *PBS* and *Biblio-Links* now take advantage of the increased speed and larger screen size of the Macintosh II and Macintosh SE.

Radius, Inc. (408/732-1010): Radius Performance Accelerator increases the speed of the standalone Macintosh SE; Radius Full Page Display is a 15-inch large screen display that, coupled with the Accelerator, transforms the Macintosh SE into a desktop publishing system.

Sigma Designs, Inc. (415/770-0100): LaserView Display System, two new configurations of the high resolution display system designed for the Macintosh SE and the Macintosh II.

SuperMac Technology (415/964-8884): The color Spectrum and black and white Grafix high-resolution graphics controller boards are for the Macintosh II. SuperView is a black and white graphics board and monitor for the Macintosh SE.

Vamp, Inc. (213/466-5533): *McCAD Electronic Design Systems, McCAD PCB Design, McCAD Schematics* are new versions of *McCAD* software that take advantage of the increased speed and capabilities of the Macintosh SE and Macintosh II. They also take advantage of the color capabilities of the Macintosh II.

Visual Information (818/918-8834): *Design Dimensions* and *Solid Dimensions* are CAD color software for the Macintosh SE and Macintosh II.

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War Of The Windows

By Birrell Walsh

Here's my dream as the owner of an IBM clone: Imagine having three programs on the screen at once. These are all actively working programs, with their data and processing available to use. No "screen snapshots," the saving of screens in memory as the deathmasks of departed programs. We are talking about three genuinely simultaneous programs.

In other words, I want *all* my programs to be memory resident. Not just notepads and calendars, but everything: spreadsheets, databases, terminal programs, drawing programs.

It would be nice as well to have a fully graphic interface. Then those Macintosh owners would stop snickering at us. It should let us use what the technically-inclined call the bit-mapped screen.

I want to use the various schemes for extended memory that are on the market, so I can have more room; it would also be good not to be forced to use that extended memory, so the windowing program should not be memory-hungry.

Let's have it use the mouse, if we have one, but not require it. And let's have it support the various color and black-and-white graphics systems that have grown up for the IBM and its clones.

That's the dream.

HERE'S THE REALITY

Since advanced forms of DOS (which will officially allow multitasking) continue to recede into the future, we look to windowing software to find out if our dream has arrived. The two strongest contenders at the moment are Quarterdeck's *DESQview* and Microsoft's *Windows*. On my 10-Megahertz AT system, they both run at high speed. They are so full of features that it's hard to do them justice.

Both products bring a full, multitasking environment to the IBM family. "So what?" you ask. A multi-tasking environment can help you in two ways. It can do something—or several things—in the background. That means that while it prints, or recalculates a spreadsheet, or gets information from an online service through

Marketing Strategies: Microsoft Vs. Quarterdeck

InfoWorld's annual awards are a good indication of who has made breakthroughs in the software world. *DESQview* and *Windows* both got awards this year.

InfoWorld's editors seem to like Microsoft and its product. Some issues of *InfoWorld* have four or five articles about *Windows*, as if there were no serious competition. This year, *Windows* got the "Editor's Choice" award.

InfoWorld's readers and its writers, on the other hand, are demanding users. The writers sometimes treat *DESQview* as the standard that other "multitasking" software must match. The readers voted *DESQview* the "Best New Idea of 1986."

These two awards reflect how each company is going about its struggle to be number one. We talked with the publishers of *DESQview* and *Windows* about their respective strategies.

Quarterdeck—Compatibility, Flexibility

Terry Myers is the president of Quarterdeck Office Systems, which publishes *DESQview*. Their strategy to date is not to try to set standards, but to be compatible with other software. "Let the users choose their own software," says Myers. Quarterdeck will not try to make a "fully graphic" interface, for instance, until there *is* a graphic standard for the PC world. Quarterdeck is even softpedaling its own *DESQview Companions* series of utilities—four programs that provide a calculator, a notepad, a full-featured terminal, and a datebook. Myers says that *DESQview's* philosophy from the beginning has been, "Let each user build his/her own workstation."

Conservative about trying to set standards, Quarterdeck is aggressive in supporting hardware. *DESQview* can be run on machines from the original no-graphics-board IBM monochrome to EGA-equipped color machines. It was bundled last year with AST boards. Now it is supporting the Compaq 386 machines, and it is bundled with Advance Logic Research's 386 PC—the "Access"—and PC Design's 386 "Grande Vitesse."

Myers says she intends *DESQview* to compete in quality, not price. *DESQview* alone costs as much as *Windows* with all its utility programs. *DESQview* with *DESQview Companions* costs twice as much as *Windows*. Myers points out, however, that there are hidden costs to *Windows*; she mentions the need for a graphics board to support its all-graphics interface, the need an AT-compatible machine for speed, the need to wait for or acquire *Windows*-compatible software to fully use the program.

"Satisfied users are our prime advertisements," says Myers. A cliche, but the "Best New Idea" award from *InfoWorld* readers is quite a free advertisement.

Microsoft—Setting The Next Standard

Marty Taucher is Public Relations Manager for Microsoft. He says that Microsoft intends *Windows* to become the dominant interface for users in the MS-DOS world.

While *DESQview* makes the user's present software able to multitask, *Windows* is a standard that software will be designed to meet. Taucher says that falling prices for graphics boards and monitors have made users eager to upgrade to a fully graphic interface. That interface has pull-down menus, icons, scrolling bars—and all these things make the computer easier to use. Taucher says that Microsoft chose the "tiling" windows (rather than *DESQview*'s overlapping windows) based on research which showed that tiling made the most effective use of screen space.

Microsoft's plan to make its product the dominant interface would seem ambitious in any other company. But Microsoft has already done that once.

Is Microsoft depending on the weight of its name to sell its product? Taucher replies, "This marketplace has proven time and time again that it is not the company's name, but whether a particular product really meets the user's needs, that matters. People are buying Quarterdeck products because they are interested in doing the best they can with the existing applications. People who buy Microsoft *Windows* are doing it to upgrade. The graphics world is here today."

Will IBM bundle *Windows* with its future machines? "No comment," says Taucher.

Microsoft says there are 125 independent software vendors preparing software for *Windows* at this time, although only 20 to 30 applications have appeared. Software for *Windows* has one thing that *DESQview* cannot claim: the ability to exchange graphic data with any other *Windows* software. If Microsoft succeeds in its plan to set the new graphic standard, *DESQview* may find that the standard it has to accept belongs to *Windows*.

Has the clout of *Windows* driven *DESQview* from the field? Surprisingly, no. The bottom line: *DESQview* claims 400,000 copies sold in 1986; *Windows* claims 500,000 copies in the same year. This battle has just been joined.

—Birrell Walsh

DESQview's windows are much more usable than those of _Windows_. They can be opened to full screen or re-shrunk to small size with a "zoom" command. The smaller windows can be resized and moved with your mouse or the keyboard's arrow keys.

the modem, you can be working on another project. It does not really do all these things at the same time—in fact it switches rapidly among the projects—but the effect is very much the same. It means that your computer is not "out of service" when it has a long task to do. Multi-tasking makes it time-share between the background task and what you are doing now. It's like having two computers, although each is a little slower than the computer with only one task. But since you usually spend much of your time in an application thinking about what to write next, or considering a result you have just gotten, the computer is just making use of time you waste.

The second way a multi-tasking environment helps you is that it lets you juxtapose programs. Most projects require many kinds of information and many kinds of tools. With a multitasking system like *DESQview* or *Windows*, you can have all the information and the tools available at the same time. A businessperson talking on the phone can open a spreadsheet and read prices to a client, open a word processor to start a letter about the conversation, and then go back to the spreadsheet to figure what would happen to the profit margin if the client got a discount. The spreadsheet calculation can be copied whole into the word-processor, which is still open on the same screen. The businessperson can then open an outlining program in which the things-to-do list is kept, to make a note about follow-up.

When I program in C, I keep the compiler available in one window, an editor for writing the program in a second, and a debugger (to figure out what went wrong) in a third. None of these programs was designed to be RAM-resident, but the windowing software makes them all as co-resident as *Sidekick* or *SuperKey*.

Windows has all the clout of Microsoft behind it. We all waited for *Windows*, and when it came out, we ran to get it. You can get it for $65.

It's feature-laden: it has a word processor, and a notepad as well. It has a robust drawing program, a clock with moving hands, and a calculator. It has games. It has a calendar. It uses icons to hold resident but inactive programs at the surface of the program. It has a clipboard to carry data from one application to others. It has a simple terminal program.

I opened *Windows* and (with a little work) convinced it to run my favorite terminal program in a window. Then I was able to check in with an online service while, in another panel, I drew a picture in the *Windows Paint* program. Ah, glory! Everything one could want in a windowing program! Watch out Macintosh!

A moment later I tried to load *VP Planner*, my spreadsheet. *Windows* locked up irretrievably, and my disillusionment began.

There is always some little problem with it, alas, that keeps it from being as usable as you want. The *VP Planner* problem turned out to be that *Windows* would not allow it to run in a window—or at least I couldn't make it run in one. Those wonderful sketches that you make in *Windows Paint* can be transferred to *Windows Write*—but (says a little note on p. 123 of the *Windows* manual) you cannot paste graphics information into a "standard application." That's an application other than the ones that come as a part of *Windows*.

Windows has a pleasant little terminal program, but it doesn't support commmunications port #4, which I use for my modem. *Windows Write* does not support my letter quality printer. It is possible that *Windows* has solutions for these and all the other annoyances I experienced with it, somewhere in its three-volume manual set. Why should a user confront all this frustration in using what is supposed to be a background product?

Windows would win the contest for graphics without a contest *if* the Microsoft people had not chosen a particularly ugly form of window. *Windows* windows "tile": instead of overlapping (as do *DESQview*'s windows), the program uses smaller and smaller, non-overlapping windows. The first application uses the whole screen (except for *Windows*' large command lines). The second application uses one-half of the screen, while the first is squeezed into a half-screen window. Further applications use smaller and smaller windows. Although they can be "zoomed" to full screen, the windows are resized primarily by removing applications from the screen.

DESQview's applications can be in a messy pile of overlapping but large windows; any one of the applications can be brought to the top of the pile. These windows can be opened to full screen or re-shrunk to small size with a "zoom" command. The smaller windows can be resized and moved with your mouse or the keyboard's arrow keys. *DESQview*'s windows are much more usable than those of *Windows*.

In fact, just about everything about *DESQview* is more usable than *Windows*. *DESQview* has a well-laid-out and well-indexed spiral bound manual. It has a tutorial that is exactly the right length to be a one-sitting lesson, and to get you hooked.

DESQview undertook a smaller mission than did *Windows*, and carried it off impeccably. *DESQview*'s simplicity is based on Quarterdeck's

The Users Speak

Both Microsoft and Quarterdeck suggested that we talk to their satisfied customers. I asked for names, and got one each: a software developer (Art Shane of Strawberry Software) for *DESQview*, and a systems designer (Kevin Hynes, an independent consultant working at Citibank) for *Windows*.

Hynes is working with the "Credit Admin" Group at Citibank in New York. The group is responsible for making financial analyses of companies. The analysis may be used by Citibank in deciding whether to extend credit to a company, or it may be used by an outside client deciding on a merger or acquisition.

"At Citibank, the group can choose its own software package," says Hynes. "We chose *Windows* because it lets us integrate financial software, word processing and graphics easily."

Hynes' client group uses Microsoft *Word* for word processing, *Micrografx Draw* from Micrografx, Inc., for graphics, and Aldus *PageMaker* for their final layout. "Integration is the primary advantage," emphasizes Hynes. "With material coming from several different programs, a tiny change can take a lot of time. Without *Windows*, you always have to keep track of versions: will this program read data from that version of that program? With *Windows*, it's just a matter of cutting and pasting. It's not a 'hot-link.' The changes don't move automatically into the final report. But cutting and pasting is fast and easy.

"*Windows* is easy to use. The hard part is learning to be a layout person. You have to have someone with an artistic sense to do that."

Why not use a Macintosh? Hynes replies,"We're doing a comparative study of the Macintosh versus a PC with *Windows*. The Mac clearly is the way to go if you're a professional layout person, but in just a year the gap has closed dramatically. In two years desktop publishing on the IBM will surpass the Macintosh. We want to leverage the software we already have."

Hynes used Digital Research's *GEM* until *Windows* came out. "We switched because of the Microsoft name. The industry was starving for a standard, and Microsoft had the name and the technical expertise. You buy *Windows* for the same reason you buy an IBM PC. Everyone is writing software for it."

Is *Windows* the solution for everything? "I wouldn't recommend it if the user had to swap things to and from disk. But as a 'context switcher' it's great," says Hynes.

Art Shane is President of Strawberry Software in Watertown, Massachusetts. The company is developing a new application that will use *DESQview*. The application, *A-Cross*, is a cross-tabulation program that does a lot of number-crunching. "We wanted the user to be able to use word processing or a spreadsheet while the cross-tab was going on in the background. *A-Cross* produces *Lotus* spreadsheets, so it's good to be able to open *Lotus* in another window.

"*DESQview* is a very simple program for the end-user—we like the way it allows you to size and position windows and the way it allows you to use macros," says Shane.

Why didn't Strawberry Software use *Windows*? "We didn't need graphics. I'm not knocking *Windows;* you can do a lot of things in *Windows*. But takes a lot of work. Using *Windows* would have imposed limitations—it doesn't work on a mono system without a graphics card, and it takes memory for the graphics system. *DESQview* has [IBM standard] Topview functions. That made developing an interface trivial."

Rick Pendzick, Vice President of Software Engineering, adds: "*DESQview* uses the [IBM standard] Topview applications program interface. You can create a screen, build a simple interface around it, and get it up and running in an amazingly short period of time, all because of that Topview applications program interface."

Weren't they concerned about the power of Microsoft's reputation? Says Shane: "Most of the copies of *Windows* are bundled. No, the name was not an issue."

—Birrell Walsh

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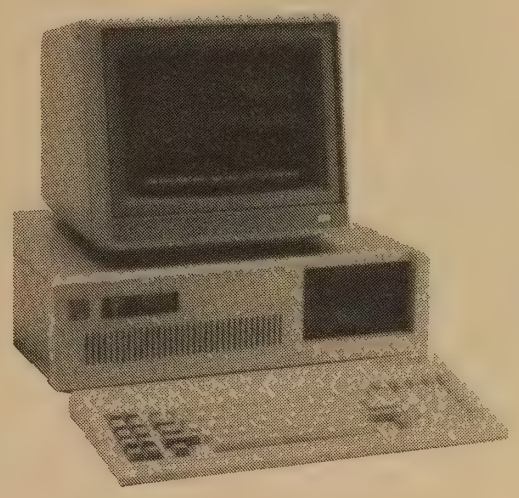

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early admission that the IBM family consists of text-based machines. *DESQview*, therefore, uses text windows for most applications. On my Hercules-based system, graphics applications must work full screen. All other applications work cheerfully together in text-only windows. *DESQview* also guessed that most purchasers already have word processors, notepads, and paint programs if they want them. *DESQview* does not provide them.

I was repeatedly frustrated using *Windows*. I was not able to get my spreadsheet working properly without a call to Microsoft's support line. After my tour of Microsoft's automated telephone-routing system, a helpful technician solved my problem. As soon as I hung up, another puzzlement arose: it seemed to me that the only way I could retire my full-screen application was to reboot my system. No doubt my fault—if I had studied the manual longer I bet I could have found a solution. I took an easier path: I dumped *Windows* and went back to working in *DESQview*.

To compare support between the companies, I called Quarterdeck and presented them with an analogous problem. No robot phone system this time: I found pleasant people and a patient technical-support person who got a finicky program comfortable in *DESQview*.

FEATURES

I found that *DESQview*'s windows were large enough, and manipulable enough, to make programs really co-resident. *DESQview* permits you to have up to nine windows open on the screen at once. Of course, your memory will fill up much faster than that. *DESQview* and *Windows* both have automatic swapping, which will move the application to your disk without closing it. You can then bring it back from disk by selecting that window again. With a floppy disk, this can be tedious. With a hard disk, it is quite expeditious. With a RAM disk, the "**Swapping..**" window merely flashes on the screen.

Even with swapping to disk, both programs take up so much memory for themselves that it is not possible to run the largest applications—*Paradox* or *Javelin*, say—without expanded or extended memory boards. *Windows* leaves you 420K, while *DESQview* leaves about 455K for your programs.

DESQview's "Mark and Transfer" function is friendly and thoughtful. You can transfer text easily enough. Quarterdeck's people have also included a facility to transfer text into a spreadsheet. Most spreadsheets require **<enter> <down-arrow>** to enter text into a cell and then move one cell down. *DESQview* lets you do this. *DESQview* also has a function to strip text characters around numerals and allow them to be transferred into a spreadsheet as pure numbers. This is useful with spreadsheets that would treat "Total: $13.05" as text rather than as a number. Transferring it as text would put "Total: $13.05" in the spreadsheet. Transferring it as a number would put "13.05" in the cell. *DESQview*'s Mark and Transfer system does not handle graphics at all.

DESQview's thoughtful attitude shows in the inclusion of a detailed macro facility. A lot of us use macros, but a macro program is going to take 50 to 100 thousand bytes in an already crowded environment. *DESQview* allows you to make macros for *DESQview* itself. They can be invoked only when the *DESQview* menu is open, but they can open and close applications and move information between them. Other *DESQview* macros can be defined for the applications; these application-specific macros are loaded when *DESQview* opens a window on the application, and are active only when the application is active. A *DESQview* macro can call a macro in any application. I set one up to open DOS and call the SHIPDISK routine to park my hard-disk head. I am writing another to log my usage for the IRS.

Windows, alas, has no macro feature.

CONCLUSIONS

When you play with a lot of software, you get to feel that software falls into two classes: that written for the programmer, and that written for the user. *Windows* seems written for the programmer, on the theory that it's going to be a new standard. After all, the "MS" in "MS-DOS" is for Microsoft. They could very well capture the windowing market by the power of their name alone. It worked for IBM, didn't it? Software written for the user, on the other hand, depends on winning over the buyer with good features rather than intimidating him or her with "Nobody ever got fired for buying ... ". It depends on friendly word of mouth.

Beginning this review of windowing software, I was prejudiced in favor of *Windows*. *Windows* is graphically based. Like *GEM*, it is an attempt to bring the "look and feel" of the Macintosh to the MS-DOS world, and it is packed with goodies. Usage changed my mind. *DESQview* is agreeable, reliable, and flexible. I did not find *Windows* to be any of these things.

Experimenting with *Windows* over several months, I always spent more time in the manual than I did actually using the program. *DESQview* I have had for only one month, and I have installed it in my AUTOEXEC.BAT file so it comes up when I boot my computer. I like it, I can use it without keeping the manual open beside me, and *DESQview* really makes me more productive. Maybe *Windows* will come through in some future version. For now, *Windows* promises but *DESQview* delivers. □

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WordStar: The Rebirth

By Ed Kahn

In the beginning, there was *WordStar*. Not that everybody loved it, but over the years it became the standard word processor. Even if a person did not like the program, it became so much of a standard that computer users were required to learn some of its arcane command structure. Programs from *SuperCalc* to *Sidekick* relied on the commands of *WordStar* for simple editing procedures.

But for some inexplicable reason, MicroPro, its publisher, failed to move forward. Pure inertia kept the program sales at an amazingly high level. Long after *WordStar* had become a real dinosaur in the age of fast computers equipped with hard disks, companies continued to buy the program. Seasoned *WordStar* users liked it so much that they found ways around the many problems inherent in using the program. The program did not support paths, so hard disk users had to install vast portions of the program on each subdirectory in which they wanted to use it (or else purchase *File Path*, a wonderful program which gets around the limitations of path requirements). If a person had two printers, it was necessary to install two different versions of the program—one for each printer. The problems go on and on, and MicroPro failed to do anything to address them. They came out with *Easy*, an entry-level program for writers with limited needs, and they came out with *WordStar 2000*, an elaborate program that veteran *WordStar* users rejected because it did not build on the *WordStar* command structure.

In the meantime, competition was breathing down the back of MicroPro. Software giant Microsoft came out with *Word*, a highly sophisticated program that gained a loyal following. And a tiny outfit in Utah came out with *WordPerfect*, which was well thought out and offered an array of excellent features. Proving that it was not too late to get a foothold in the industry, Satellite Software became a major force in word processing software and changed its name to WordPerfect Corporation. Meanwhile, MicroPro continued to develop new products, but ignored the huge base of loyal *WordStar* users. It was a mystery why a company with such a head start would ignore the demands of one of the most loyal groups of users in existence.

Several years ago, a group of ex-MicroPro employees developed a *WordStar* clone called *NewWord*. It solved many of the problems that frustrated *WordStar* users. But the company was never able to adequately promote the product. Corporate users continued to order *WordStar* or move over to one of the other excellent programs that had become available.

In the summer of 1986, something happened to change the course of MicroPro. In a corporate shakeup, new leaders were brought in with a commitment to breathe life back into the company. They soon announced that a new version of *WordStar* would be developed. Then they did something really unusual: instead of suing the folks who had created *NewWord*, they bought the company! This move saved them lots of time and legal fees. The result was that they were able to immediately work toward the release of *WordStar Professional, Release 4*. By the time you read this, the new revision of *WordStar* should be widely available, and if you like *WordStar* you will love this major update.

WordStar Professional 4.0 has a new look and feel—in many ways resembling *NewWord* more than its previous version, *WordStar 3.3*. But all of the *WordStar* features are here, plus a lot of new capability. I gave the new *WordStar* a thorough going over.

I ran the program on an ITT XTRA XP, an 80286 - based computer equipped with a hard disk. Although the program is designed to work on a machine with two floppy disks, like all of the best new programs, it demands a lot of memory and works most efficiently with a computer equipped with a hard disk. The program requires a minimum of 256K, but MicroPro has gone out of its way to make the program work as easily as possible on a machine set up with two floppies. The documentation has a special section on creating a single floppy disk that will contain all of the files you need to run *WordStar*. And they show you which files to add to the disk, provided you have enough memory, in order to be able to use additional features.

There are three elements in the *WordStar* package: *WordStar*, its new spelling checker, and a 220,000-word thesaurus program called *Word Finder*. If you have memory limitations, you can configure the installation to eliminate any of these modules. The minimum memory requirement for using *WordStar* along with the smallest configuration of *Word Finder* (with only 120,000 words) is 320K. The completely new documentation is well organized and readable. MicroPro has also included an interactive tutorial program on disk to get the new user up and running. This disk makes the assumption that the user knows nothing about either computers or word processing, so it is a good tool for the novice.

I'll focus on new and changed features of *WordStar* so that current users can decide whether they want to upgrade. If you never liked *WordStar*, you probably won't like it now. If you were hoping that the new version of *WordStar* would make it into a different product, you are out of luck. But if you like *WordStar*, but wished that it could do some of the things that the competition does, then you may find that this is your dream come true. MicroPro claims that they have added or updated 125 features.

WHAT'S NEW: PATH SUPPORT, UNERASE

For the hard disk user, the most significant change in the way the program works is its ability to support paths. The most helpful new command is unerase. This means that if, in your haste, you accidentally erase a paragraph instead of copying it, you can beg forgiveness from the program and make like it never happened.

The command is useful for moving text as well. Let's say you want to move a word to a different place in a sentence. The easiest way to do it is to use the erase word command, move the cursor to the new location, and then use the unerase command.

I also find the command useful for the simple replication of a line. Say, for instance, that you are creating a form and want a line repeated six times. The easiest way is to use the erase line command and then unerase it at the same place—thus restoring it to where it was originally—and then move to the next location and unerase again and again and again until you have as many replications as you want.

SHORTHAND, PRESET FUNCTION KEYS

Another new feature is what *WordStar* calls shorthand. This is a very simple macro facility that allows you to hit the Escape key plus any other key in order to invoke a series of keystrokes. The macro can be used to speed-type a word or phrase like your name, or it can be used to call up a series of commands like ^T^F^U, which transposes two words. In addition to letting you make up your own macros with the shorthand, the program also offers pre-set macros for calling up the date and time. Thus, for instance, you can insert the current date into a letter by typing the Escape key followed by @. I find these easily defined macros extremely useful. For instance, in preparing this review, I set "Escape W" to spell out *WordStar*.

Besides the shorthand feature, the new *WordStar* has 40 pre-set function keys designed to call up frequently used commands. These keys can be fairly easily redefined to do anything you want. Both the shorthand and function keys are a real aid to working quickly. I like these features, but find them a bit limited for some of the commands I frequently use. Unfortunately you cannot write long macros with either the shorthand or function keys. As a result, I use *WordStar* in conjunction with *ProKey 4.0*, a sophisticated macro utility that allows much more complex macros to be developed. This doesn't mean that I don't use either shorthand or the function keys—on the contrary, I often build these commands into my more complex macros. For instance, I have complex macros which allow me to type in the return address on my correspondence, including today's date, my salutation for letters, formats for mailing labels, envelopes, and postcards, all with the touch of two keys.

USE OF OTHER APPLICATIONS WITHIN A DOCUMENT

WordStar has added several other features that give a lot more power to the program by allowing you to do tasks unrelated to word processing while you are working within a document. You can now run other programs from within the document you are working on. For instance, as I type this, I can hit ^KF and be out

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Ed Kahn is the co-author of The Skeptical Consumer's Guide To Used Computers. *Copyright ©1987 by Ed Kahn. All rights reserved.*

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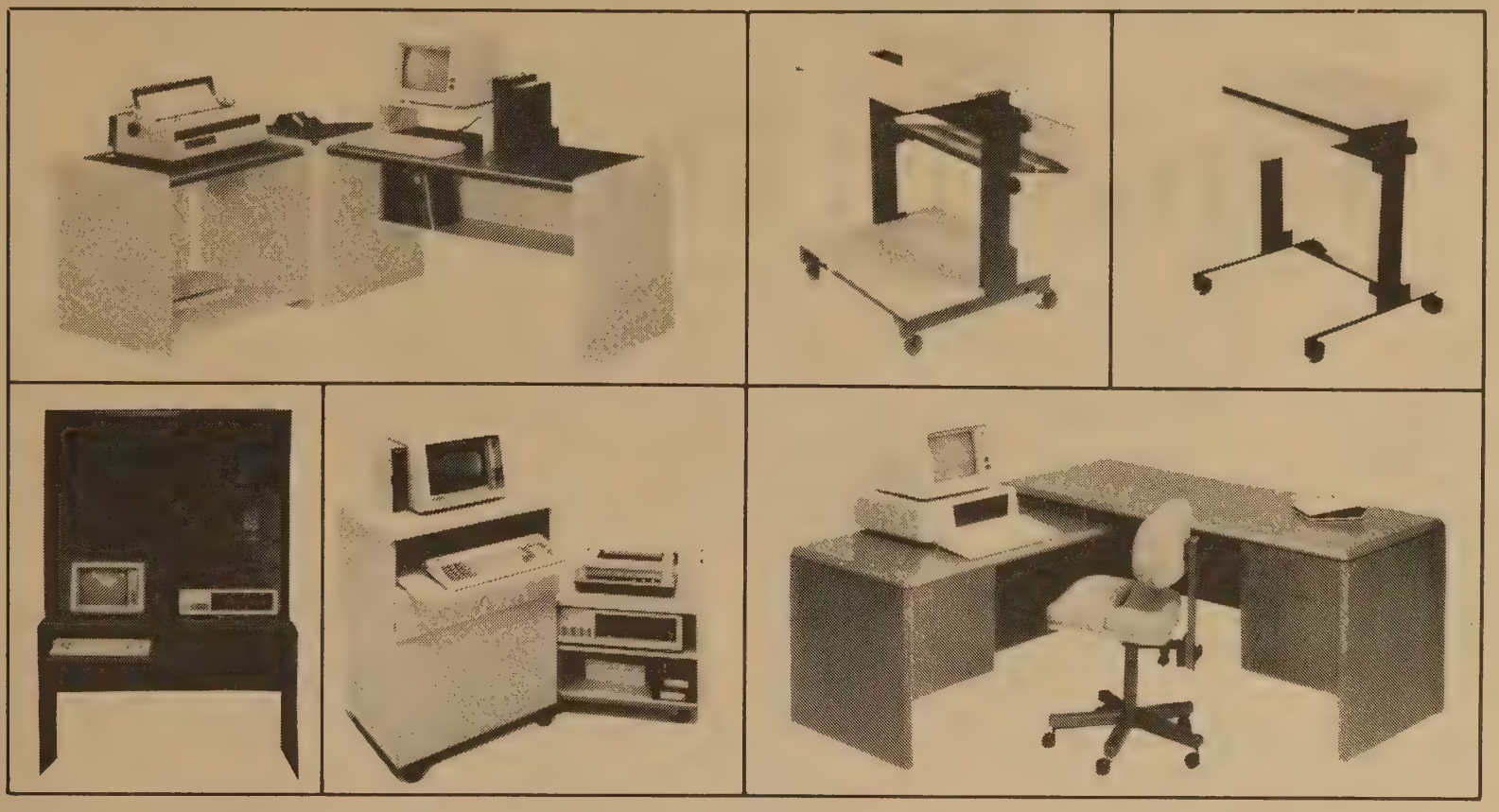

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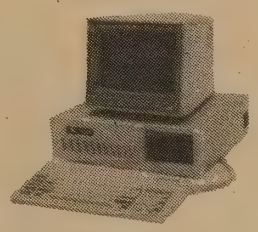

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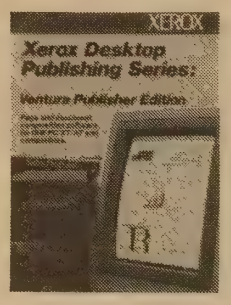

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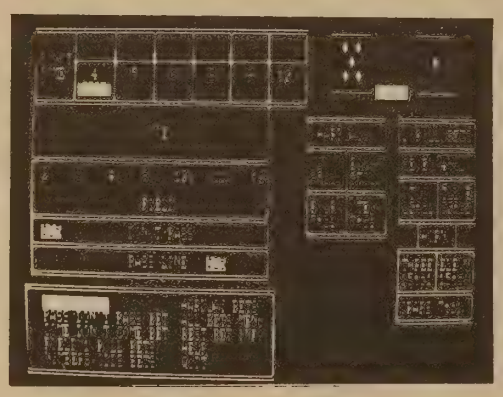

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of this document and able to call up any program I like. So, if I need some information from another file while I am doing this review, I can leave this document, run another program, and, when I'm done, hit any key and be right back here as if nothing had happened. This is much easier than exiting this document, running another program and then re-entering this document and finding my place again. Similar commands allow you to do an array of other tasks from within *WordStar* as well.

Although you can run other programs from within *WordStar*, you still don't have the ability to view two documents side by side and shift material back and forth. With *Sidekick*, however, you can do just that. Read on and you will learn that MicroPro has an introductory offer that will get you *Sidekick* along with *WordStar*.

MATH FUNCTIONS

Another useful feature is the addition of math functions. By hitting a couple of keys, you suspend the work you are doing and move into a 14-function math calculator. You can easily move the results of the calculation into the text you are writing. Another math command allows you to get the sum of all numbers that appear within a block of text. So, for instance, if you are writing a letter to someone who owes you money, you can detail the money owed in a paragraph and then, at the touch of a few keys, get the sum of all of the figures.

SPELLING CHECKER AND THESAURUS

The new improved spelling checker allows you to check the spelling of either a word you type in, a word in a document, or the whole document. In any of these modes, the program is fast and efficient. I have removed all of the other spelling checkers from my system, as this does everything I want. It offers a number of convenient alternatives. The basic checker contains 87,000 words. While not the largest spelling checker on the market, it works beautifully with *WordStar*. It finds words phonetically as well as alphabetically—for instance, "newmoonia" yielded "pneumonia." For those in the medical, legal or financial fields, additional specialized dictionaries are available. When a word is found that the dictionary does not recognize, it gives you the option of adding it to your personal dictionary list so it will be recognized in the future.

The thesaurus is a program called *Word Finder*, which MicroPro has bundled with *WordStar*. The list contains 220,000 words, but the actual base list is only 15,000 words, compared to 20,000 in *Webster's New World On-Line Thesaurus* — the largest that I know of. Nevertheless, the program is easy to use and spews out a large list for any of the 15,000 base words that are addressed. Furthermore, you can then ask for synonyms for any of these words and so on. The program holds each of these lists in memory so you can retrace yourself through the previous screens by hitting the PgUp key. When you find the word you want, hitting the return key will substitute this word for what you had. I find a thesaurus helpful not only for finding synonyms, but also for making sure that I am using the right word for the meaning I have in mind. For instance, do I want "further" or "farther"?

OTHER NICETIES

MicroPro has gone out of its way to include features that make *WordStar* a pleasure to use. The directory that appears below the opening menu now shows the size of each file. You can call up the file by placing the cursor next to the listing in the directory and pressing return. And you can call up backup files for viewing. In earlier versions, you had to rename the file and then call it up. This new feature allows you to see the backup file, but it comes up in protected mode so you cannot alter the file in any way. You can, however, copy, rename, or erase the file even from within the document you are preparing.

CONCLUSIONS

MicroPro has done it right this time. Not only have they come up with a brilliant program, they've made it easy to get. Although *WordStar Professional, Release 4* sells for $495, the company has an introductory offer that provides for either a $100 rebate or the inclusion of *Sidekick, Graph-In-The-Box*, and *Ready* with the package. Current *WordStar* users can upgrade for $89.00

Is the program perfect? Of course not. There were a few features that I would have liked to see included in the program. MicroPro intends to continue refining the program and including more and more features in subsequent releases of *WordStar*. So let them know your suggestions for an improved *WordStar*, just as I will.

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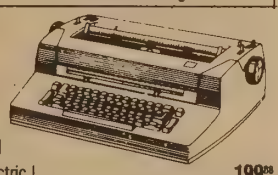

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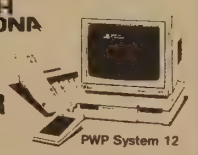

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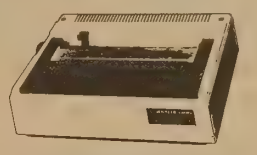

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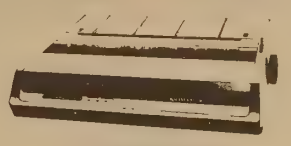

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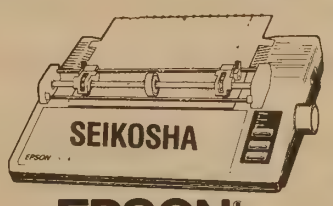

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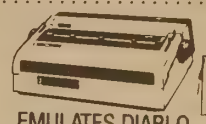

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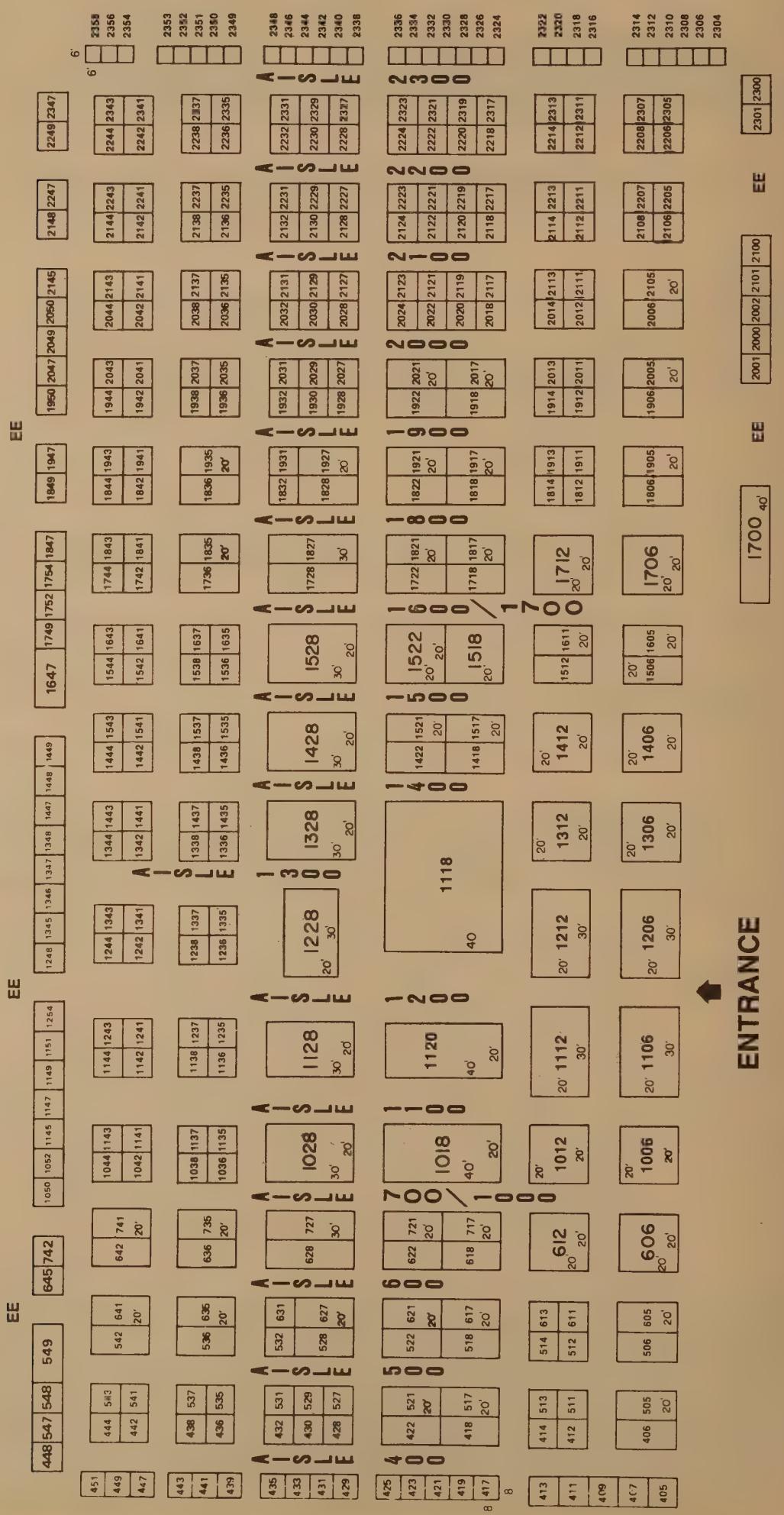
12th West Coast Computer Faire

Moscone Center, San Francisco

March 26-29, 1987

The West Coast Computer Faire is an eagerly-awaited and heavily-attended event every year, offering a spectrum of exhibits, events and conferences. This year's Faire boasts an unusually versatile program, with hundreds of exhibitors offering informative product demonstrations and bargain prices, as well as a full schedule each day of conferences for every interest. In addition to the conferences listed here, 20 additional Professional Development Seminars are available for an additional fee.

Admission to the Faire is $20 for all four days or $12 for one day. Tickets are available at Northern California BASS outlets or at the door on the days of the show. If you'd like more information, call The Interface Group at (714) 759-3660.



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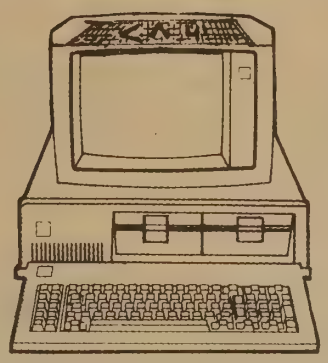

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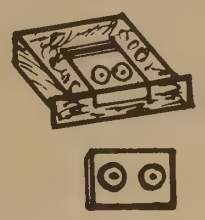

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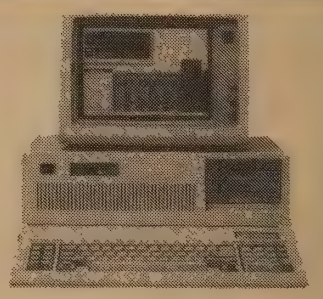

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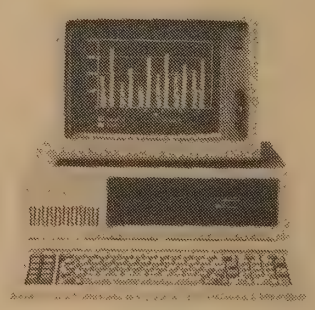

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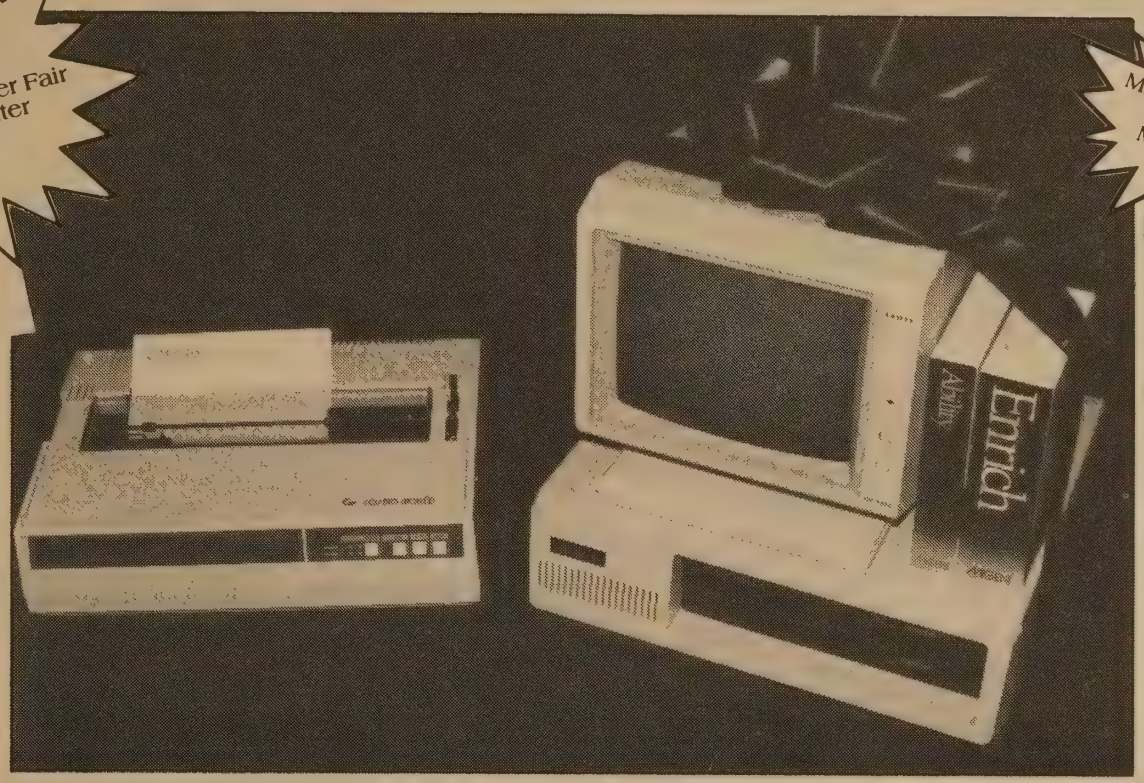

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CONFERENCE SCHEDULE

Thursday, March 26

The Intel Universe: 80386 And Follow-Ons
11:00-12:30
Chair: John Shiell, Associate, CGA Associates
Panelists: Steve Kahng, President, Up-To-Date Technology; Dana Krelle, Product Marketing Manager, Intel Corporation; Evan Lim, Director of Product Marketing, Softguard Systems; Sikander Magvie, Product Marketing Manager, Chips and Technologies

Buying Your First Machine? Consider The Tradeoffs
11:00-12:30
Chair: David Carlson, Producer of Training Programs, David Carlson Productions
Panelists: David Needle, Editor, *Computer Currents;* Nick Sullivan, Senior Editor, *Family Computing*

Pascal For The Masses: Turbo And Otherwise
11:00-12:30
Chair: Bruce Webster, Consulting Editor, *BYTE;* Computer Science Department, Brigham Young University
Panelists: David Intersimone, Director of Product Services, Borland International; Dr. Elliott B. Koffman, Computer and Information Science Department, Temple University; author of Pascal textbooks; Bob Phillips, Technical Sales Support Manager, Oregon Software; Andrew Singer, Vice President of Product Development, Think Technologies

Expert Systems: Current Availabilities
11:00-12:30
Chair: Tom Schwartz, Contributing Editor, *AIEE Times*
Panelists: Mark Linesch, Manager of Product Marketing, AI Applications, Texas Instruments; Adam Osborne, President and CEO, Paperback Software International; Harry Reinstein, President, Aion

Desktop Networking: Is It Always "Next Year"?
11:00-12:30
Chair: Einar Stefferud, President, Network Management Association
Panelists: Phil Edholm, PC Networking Support Manager, Sytek, Inc.; Dave Fowler, Product Marketing Manager for PC-NFS, Sun Microsystems; Dan Lynch, President, Advanced Computing Alternatives

Small Computers And Shifting Visions Of Utopia
1:00-2:30
Chair: John Dvorak, Columnist
Panelists: David Bunnell, Editor-in-Chief, PC World Communications; Lee Felsenstein, President, Golemics, Inc.; Don Lancaster, Microcomputer Guru; Gary Kildall, President, Knowledge Set Corp.; Jim Warren, Computer Faire Founder; Steve Wozniak, President, CL-9

Desktop Publishing: Mac and PC Overview
2:45-4:15
Chair: Tim Bajarin, Vice President, Microcomputer Research Group, Creative Strategies International
Panelists: Ken Abbott, President, Manhattan Graphics; Diane Burns, President, TechArt San Francisco; John H. Meyer, President, Ventura Software, Inc.; Ray Rocque, Vice President of Marketing, Howtek, Inc.

The Motorola Universe: 68020 and Follow-Ons
2:45-4:15
Chair: Kevin Meyer, Area Engineering Manager, Motorola Corp.
Panelists: Steve Sakaman, Director of Hardware Engineering, Apple Computer; Howard Lee, Manager, Hardware Engineering, Sun Microsystems; Jack Browne, Director of Marketing, High-End Microprocessor Group, Motorola Corp.

Global Restructuring For The Electronics Industry
2:45-4:15
Co-Chairs: Jan Lewis, President, Palo Alto Research Group
George Morrow, Vice President of Engineering, Intelligent Access
Panelists: John Rossi, President, Blue Chip Electronics; Arthur Taylor, Jr., Regional Manager, California Department of Commerce

What Next After EGA?
2:45-4:15
Chair: Rik Jadrineck, President, Micro Flow; Vice President, Archsoft
Panelists: Jack Grimes, Product Line Architect, Graphic Components, Intel Corporation; Geoffrey B. Koblick, President, IMSI; James Sprandel, Technical Operations Manager, Electronic Photography and Imaging Center, AT&T; Joe McCarthy, Vice President, Integrated Computer Technology

11 Steps To Becoming A Knowledgeable Software Buyer
2:45-4:15
Chair: Robert Krumm, President, Microcomputer Schools, Inc.
Panelists: Dave Hallerman, Reviews Editor, *Family Computing;* Ezra Shapiro, Consulting Editor, *BYTE*

MS-DOS Futures: A Classic Endures
4:30-6:00
Chair: Mitch Irsfeld, Senior Editor, *Computer Reseller News*
Panelists: Chris Doner, President, Access Softek; Allen Kuchek, Senior Researcher, Novon Research Group; Gary Saxer, Technical Marketing Manager, Quarterdeck

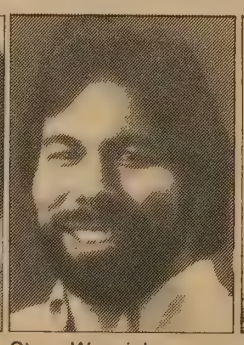
Productivity Software For First-Time Users
4:30-6:00
Chair: Alan Kaplan, President, American Index Systems
Panelist: Jef Raskin, Founder and CEO, Information Appliance, Inc.

Forth: Another Alternative For Serious Users
4:30-6:00
Chair: George W. Shaw, President, Shaw Laboratories
Panelists: Dr. C.H. Ting, Staff Scientist, Lockheed Missiles and Space Co.; Mike Ellola, Consultant/ Programmer, Technical Writer

Co-Processor Chips And Accelerator Boards
4:30-6:00
Chair: Robert Kutnick, Director of Strategic Projects, AST Research
Panelist: Stephen Beck, President, Beck-Tech

Bay And Valley Electronics: Area Job Forecast
4:30-6:00
Chair: Tapan Munroe, Chief Economist, Pacific Gas & Electric
Panelists: Raymond Brady, Manager Analysis Group, Association of Bay Area Governments;

John Dvorak


Steve Wozniak

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Keynote Plenary Session: Small Computers And Shifting Visions Of Utopia

Thursday, 1-2:30 pm

Gadfly columnist John Dvorak presides as computer pioneers Lee Felsenstein, Gary Kildall and Steve Wozniak, along with Computer Faire founder/computer populist Jim Warren and other luminaries, discuss the successes and failures of the personal computer revolution — and what's next.

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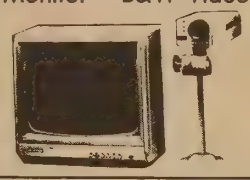

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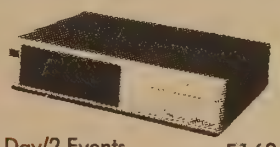

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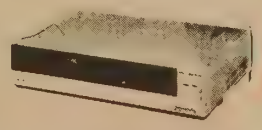

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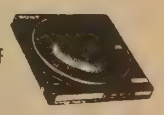

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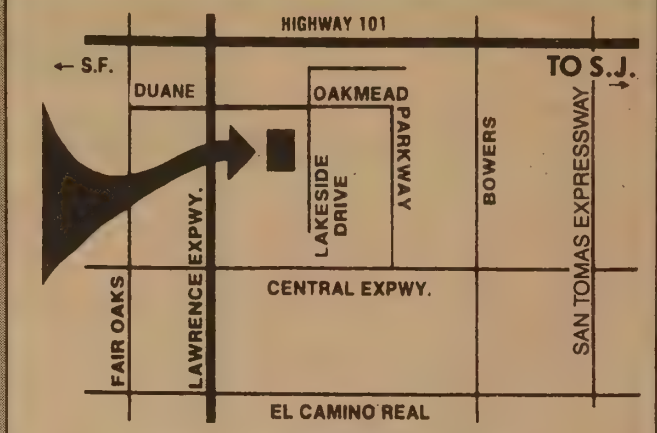

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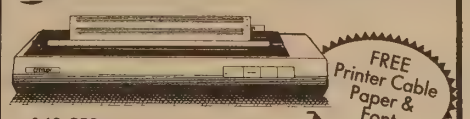

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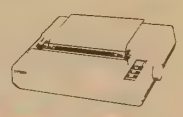

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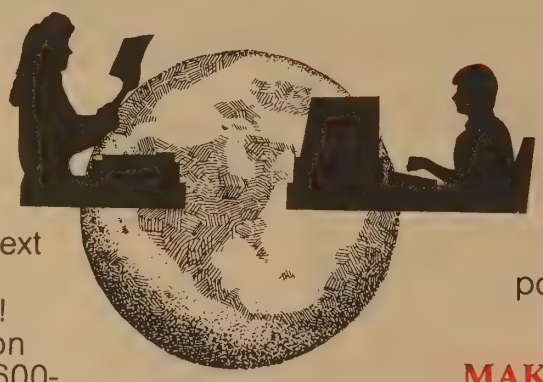

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Friday, March 27

MacDOS-2 For Powerhouse Macs
11:00-12:30
Chair: Jerry Borrell, Editor, *Macworld*
Panelist: Ash Jain, Vice President, Apple Enhancement Products Group, AST Research

The High Tech Startup: Early Management Issues
11:00-12:30
Chair: Andrew Roman, President, RAI International
Panelists: Steven Burrill, Chairman, High Technology Group; Arthur Young; Adam Osborne, President and CEO, Paperback Software International; Paul Franson, Principal, Paul Franson and Associates, Inc.

Laptop Displays: New Twists For Users
11:00-12:30
Chair: George Morrow, Vice President of Engineering, Intelligent Access
Panelists: David Mentley, Consultant, DEM Associates; Dr. Alan Miller, Professor of Metallurgy, New Mexico Tech; Contributing Editor, *BYTE*

Word Processing Heavyweights: The Faire's Annual Review
11:00-12:30
Chair: Amy Wohl, President, Wohl Associates
Panelists: Walter D. Feigenson, Vice President of Marketing Requirements, MicroPro; Dan Lunt, Vice President of Marketing, WordPerfect Inc.; Charles Stevens, Group Product Manager for PC Word Processing and Communications, Microsoft Corp.

New Chips, New Challenges For Software Development

Friday, 2:45-4:15 pm

Jan Lewis chairs a discussion of new criteria for designing software that takes advantage of newer, more efficient microprocessors.

The LAN Workshop: Low Cost Alternatives
11:00-12:30
Chair: Tom White, President, The Seybold Group
Panelists: Harry Coin, President, Applied Knowledge Groups, Inc.; Carrel Ewing, President, Server Technology Inc.; Nat Goldhaber, President, Centram Systems West; Gail James, President, LANQuest Group

The Clone Workshop: Assemble A Bargain!
11:00-1:00
Chair: Aubrey Pilgrim, Product Assurance Engineer; Contributing Writer, *MicroTimes*
Panelist: Anoop Singh, Engineer, Paramount Electronics

UNIX Lives! The Viable Niche
1:00-2:30
Chair: Dr. Brian Boyle, Director of Research, Novon Research Group
Panelists: Philip Gill, Contributing Editor, *InformationWEEK*; Bruce Huie, Senior Analyst, UNIX Market and Strategies, International Data Corp.

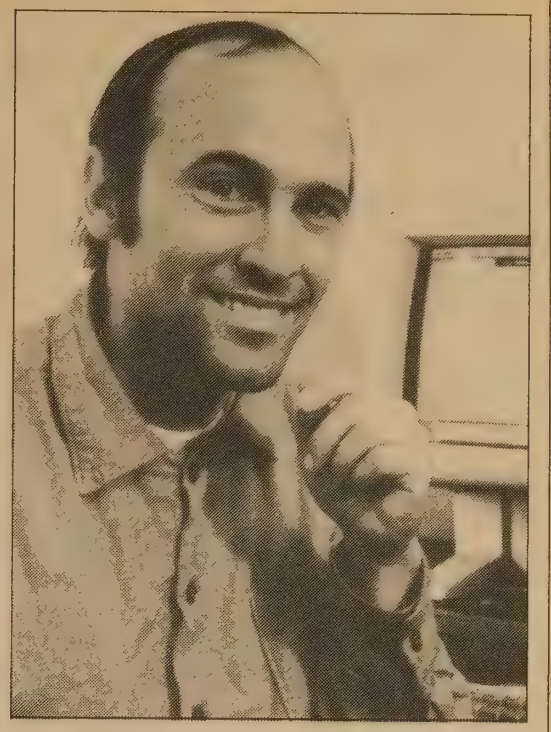
Upgrade Vs. Replace: Criteria For Decision
1:00-2:30
Chair: Darrel Raynor, President, Data Analysis and Results, Inc.
Panelists: Fougere Robertson, President, F.K. Robertson Consulting; Ben Cranefield, Systems Analyst, Chevron Information Technologies Inc.; Miriam Liskin, Microcomputer Consultant; Columnist, *Computer Currents, Personal Computing*

What's New In RAM Residency: Partitions, Standards, And More
1:00-2:30
Chair: Tom Byers, Ph.D., Vice President, Symantec; General Manager, Turner Hall Publishing
Panelists: William Higgs, Director, Software Research Services, InfoCorp; Rick Kraus, Director of Programming, PerSoft; Spencer Leyton, Vice President, Sales & Business Development, Borland International

High-Tech Stress: Coping Techniques And Resources
1:00-2:30
Chair: Alan Monat, Professor of Psychology, Cal State University Hayward
Panelists: Stephen J. Heckman, Ph.D., Clinical Psychologist; Donna Morrish-Vidners, M.S., Director of Grief Counseling, Alameda County Suicide Prevention; Betty Wenz, Ph.D., Psychologist, Counseling Services

New Chips, New Challenges For Software Development
2:45-4:15
Chair: Jan Lewis, President, Palo Alto Research Group
Panelists: Rich Bader, General Manager, Personal Computer Enhancements Operations, Intel Corp.; Ron Yara, Vice President and General Manager of Graphics Products Operations, Chips and Technologies; Cameron Myhrvold, Product Manager, Mondrian and Desktop Applications, Microsoft

Multi-Megabyte RAM: The Insatiable Need
4:30-6:00
Chair: Robert Kutnick, Director of Strategic Projects, AST Research
Panelist: Jonathan Kamin, Author; President, Kamin Consulting Services



Game Design Workshop

Saturday 11 am-1 pm

Balance of Power author Chris Crawford hosts this special session for serious amateur game writers. He'll discuss the structure of contemporary game design, common mistakes made by beginners, tips on how to find a publisher, and more.

Clubs, SIGs, And Bulletin Boards: Your Growing Network
4:30-6:00
Chair: Dr. Leon Wortman, Chairman of the Board, Silicon Valley Computer Society; Board of Directors, Software Entrepreneurs' Forum
Panelists: George Bond, Executive Editor, *BYTE* Information Exchange; John Coate, Information and Marketing Director, The WELL; Raines Cohen, System Operator, BMUG BBS; Herb Shear, Librarian, Silicon Valley Computer Society

In The Clone Game? Listen To Your FCC!
4:30-6:00
Co-Chairs: Daniel Appleman, Attorney, Radison, Pfaelzer, Woodard, Quinn & Rossi
S. Marti-Volkoff, Engineer-in-Charge, FCC.

Investing in High Tech: Criteria For Success
4:30-6:00
Chair: James Rudolph, General Partner, OSCCO Ventures
Panelists: Robert A. Hoff, General Partner, Crosspoint Venture Partners; Peter Thomas, General Partner, Institutional Venture Partners; Chad White, General Partner, Hambrecht, Quist Venture Partners

(Trans)Portable Systems: Data Entry On The Go
4:30-6:00
Chair: Thomas Dicker, District Manager, Grid Systems
Panelist: Sharon D. Cuppet, Senior Product Manager, Datavue

Mainframer's REXX Enters Micro World
4:30-6:00
Bebo White, Computer Consultant, Stanford Linear Accelerator Center

Saturday, March 28

Computerizing The Medical Office: Marketing And Practice Building
11:00-12:30
Co-Chairs: Jim Palik, President, Health Care Office, Management Enterprises
Rick Benson, Consultant/Owner, Professional Practice Builders

Systems And Schools, I: Micros For Children
11:00-12:30
Co-Chairs: Dr. Rhoda Cummings, Department of Curriculum and Instruction, College of Education, University of Nevada, Reno
Cleborne Maddux, Coordinator, Special Education and Computer Education, Northern Arizona University

Systems And Schools, II: Micros For Undergraduates
11:00-12:30
Co-Chairs: Roger Beebe, Administrative Assistant, Mark Twain High; Larry Hines, President, Computers Unlimited Enterprises

Powerful Interfaces For Computer Music
11:00-12:30
Chair: Frederick Romano, Vice President—Sales, Voyetra Technologies
Panelists: Craig Anderton, Editor, *Electronic Musician*; Peter Gotcher, President, Digit Design; David Kusek, President, Passport Design; Domenic Milano, Editor, *Keyboard*; Freff, Product Specialist, Voyetra Technologies; Jim Mothersbaugh, Manager, Roland Corp.

New Wrinkles In Data Base: Another Faire Review
11:00-12:30
Chair: Rich Shapero, President, Rich Shapero Associates
Panelists: Ken Einstein, Director of Interface Technologies, Ansa Software; Scott Walcheck, Senior Product Manager, Migent, Inc.; Bob Chapman, Vice President—Marketing, Phaser; Brett Walter, Vice President—Development, Symantec

Page Processing Software: A Faire Review
11:00-12:30
Chair: Susan Gubernat, Editor, *Publish!*
Panelists: Jim Klauber, Executive Vice President, Letraset; Signe Ostby, Vice President, Software Publishing; Michael Solomon, Vice President of Marketing and Sales, Aldus Corp.

Game Design Workshop
11:00-1:00
Chris Crawford, Computer Game Designer

"Torn Between Two Lovers": The User With PC And Mac!
1:00-2:30
Co-Chairs: Ezra Shapiro, Consulting Editor, *BYTE*
Lawrence Magid, Vice President, The Seybold Group
Panelists: Philippe Kahn, Founder and President, Borland International; Cary Lu, Vice President, General Information, Inc.

The Shareware Phenomenon: User-Supported Software
1:00-2:30
Chair: Saul Feldman, Contributing Editor, *Computer Currents*
Panelists: Patricia Fluegelman, President, Headlands Communication Corp.; Marshall W. Magee, President, Magee Enterprises; Author, Automenu; Sandy Schupper, Founder, Brown Bag Software; Bob Wallace, President, Quicksoft

Micros For Patient Care And Diagnosis
1:00-2:30
Chair: Peter Tolos, Author, *How To Choose The Right Computer For Your Medical Practice*
Panelists: John Stuppy, President, Articulate Publications, Inc.; Henry Zeiter, MD, F.A.C.S.

Micros For Law Firms: The Verdict Is In!
1:00-2:30
Co-Chairs: Martin Dean, Attorney at Law; Publisher, *Legal Technology;* Joseph Hustein, Attorney at Law, Hefner, Stark and Marois

"I'm Mad As Hell, And I'm Not Going To Take It Anymore"
2:45-4:15
Jerry Pournelle, Author and Columnist, *BYTE*

Optical Memory Gigabytes: Earlybird Applications
4:30-6:00
Chair: Dana Gauthier, Vice President—Marketing and Sales, Laserdrive Limited
Panelists: Tom Kenny, Market Development Manager, 3M Optical Recording Program; Steve Popovich, President, ISI; Richard Gruen, Senior Technical Consultant, Tec Ed Technical Publications and Graphics Services

CAD/CAM Software Options: Yet Another Faire Review
4:30-6:00
Chair: Mike Macfarlane, President, Market Navigators, Inc.
Panelists: Ken Goodman, Vice President—Marketing, Generic Software; TBA, Autodesk, Inc.; Ken Milburn, Small Systems Consultant; Columnist, *MicroTimes*

Software For Investors: A Faire Survey
4:30-6:00
Chair: Saul Feldman, Contributing Editor, *Computer Currents*
Panelists: Steven Achelis, President, Computer Asset Management; Bob Schwabach, Newspaper Columnist, Universal Press Syndicate; John Fierson, Senior Consultant, Charles Schwab and Co.

AI Front Ends: HAL And Q&A, The Intelligent Assistant
4:30-6:00
Chair: Esther Dyson, President, Release 1.0, Edventure Holdings
Panelists: Gary Hendricks, Vice President—Advanced Technology, Symantec Corp.; Jerry Kaplan, Principal Technologist, Lotus Development Corp.

Upgrading The Mac: Easier Now Than Ever!
4:30-6:00
Chair: Steven Edelman, President, SuperMac
Panelists: Ed Colby, CPU Product Manager, Apple Computer; Danny Goodman, Contributing Editor, *Macworld;* Mike Boich, President, Radius, Inc.

Sunday, March 29

CD-ROM Memory Systems: The R&D Is Hectic
11:00-12:30, Room 220-225
Chair: Linda Helgerson, President, Diversified Data Resources, Inc.; Editor, *CD Data Report*
Panelists: Michael Acheson, Mass Storage Product Manager, Apple Computer; Jeff DeTray, Publisher, *CD-ROM Review*

Accounting Software: Low-Cost Alternatives
11:00-12:30
Chair: John Lukrich, CPA, Owner, John Lukrich & Co.
Panelists: Lew Krumm, Product Marketing Manager, SBT; Roger Melanson, President, Great American Software; Gordon Whiting, National Sales Manager, Source Mate

Computers And Music: The Master's Demo
11:00-12:30
Todd Rundgren, Panacea Entertainment

Simulations And Games: Understand The Difference
11:00-12:30
Chair: Bruce Webster, Consulting Editor, *BYTE*
Panelists: Peter Doctorow, Vice President—Design and Development, Accolade; Frank Boosman, Contributing Editor, *Computer Gaming World;* Gilman Louie, CEO, Nexa/Division of Sphere, Inc.

The IBM Standard: Do Users Now "Own" It?
1:00-2:30
Chair: Stewart Alsop II, Editor/Columnist, *PC Letter*
Panelist: Gordon Campbell, President and CEO, Chips and Technologies

386-Based Systems: Early Report From The Field
2:45-4:15
Chair: Steve Hess, Director of Microcomputer Group, Creative Strategies International; Jim Lindenmayer, Senior Product Manager, Quadram; Ken Williams, Vice President—Engineering, Softguard Systems

Game Software Review: The Consumer Marketplace
2:45-4:15
Co-chairs: Gregg Williams, Atari Columnist, *Computer Gaming World*; Senior Editor, *BYTE*
Frank Boosman, Contributing Editor, *Computer Gaming World*
Panelists: Scott Mace, Game Columnist, *InCider*; Editor, *Microcosm;* Bruce Webster, Consulting Editor, *BYTE*

The Compulsory Hard Disk: New Technologies, Lower Cost
2:45-4:15
Chair: George Morrow, Vice President—Engineering, Intelligent Access
Panelist: Paul Mace, President, Paul Mace software

Lotus 1-2-3 As An Operating Environment
2:45-4:15
Chair: Rick Gibson, Executive Director, The Consortium; Chairman of the Board, 4-5-6 World
Panelists: Peter Antoniak, President, Solar Systems Software; Author, *Templates Of Doom;* Michael Lunsford, President, MacroPac International; Mitchell Russo, President, North Edge Software; Rod Turner, Executive Vice President—Sales and Marketing, Symantec

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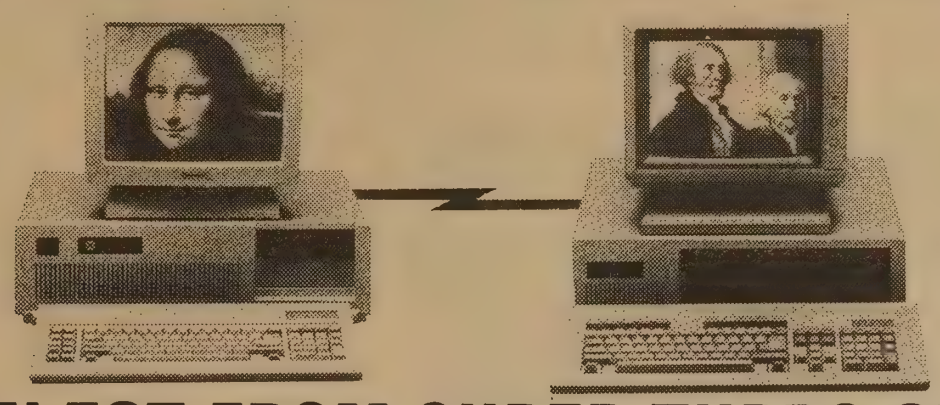

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PRODUCT ANNOUNCEMENTS

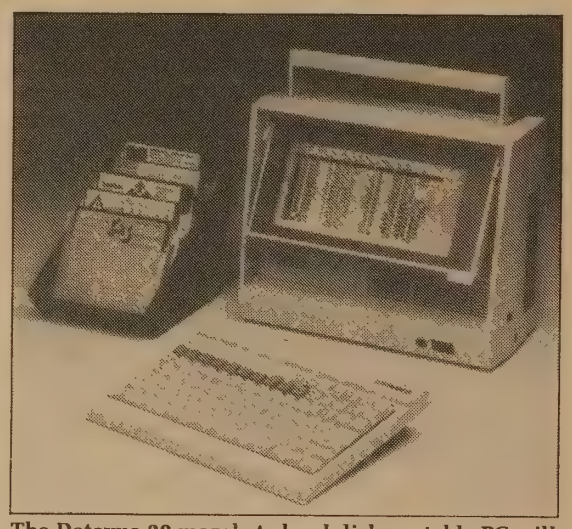
PAGr by **Plummer Research** (Palo Alto) is a desktop publishing program which sells for under $50; it does not require a graphics card or color monitor and works with a dot-matrix rather than a laser printer.

Dragnet is a *Windows*-based text retrieval program by **Access Softek** (Berkeley); it finds information about a common theme or topic scattered through many files and collects it into a single summary files. It is compatible with all files containing text, including those generated by word processors, desktop publishing systems, spreadsheets and databases.

R And R Concepts (805/966-0101) will exhibit several ergonomically-designed footrests for the computer user. The ROM model provides various swivel and exercise options, as well as massager roller balls to soothe tired feet.

Technology Marketing Inc. (503/635-3966) offers a unique software product that turns your PC/XT/AT into a sophisticated weather monitoring and weather analysis system. **PC Weather** comes complete with its own anemometer and wind vane assembly, two temperature probes, a half-slot PC board, and display software.

Quicksoft (206/282-0452) will be exhibiting Version 2.71 of its popular shareware word processor, **PC-Write.** This new version includes improvements like a spelling checker and a Screen Clip function for importing screens from other applications. Group licenses are also available.



The Datavue 20 megabyte hard disk portable PC will be available at a special show price of $1995.

Datavue's Portable Computer Division (404/564-5555) will be offering show special prices on several of its products. Show attendees will be able to purchase Datavue's 20-megabyte hard drive portable, regularly $3495, for a special price of $1995. The machine includes a 3.5" floppy disk drive and an internal RAM drive, 768K of memory, a supertwisted crystal Gaslight screen, RGB, composite, serial and parallel ports, and a detachable 83-key keyboard.

Adaptive USA offers the innovative Australian software package **Tracker.** It's an interactive filing and prospecting business system for PC/XT/AT users. It features an optional memory-resident or non-resident Hotkey mode, flexible search, sort, delineate and report functions, unlimited date-stamped note capability, and keyword listing. It works in conjunction with word processors to produce mailing labels and form letters, and allows access to up to ten data bases from within the program; it also offers an autodial function to users of Hayes-compatible modems.

Complete Computer Services (415/692-7250) will be exhibiting the **CCS Designer Computer Aided Design** software package. The program operates on IBM PC/XT/AT computers and compatibles. It allows the user to enlarge, rotate, copy, paint, zoom-in and undo drawings, as well as change angles and choose from multiple character sets drawn with vectors and curves. It supports but does not require a mouse, and works with 82 dot-matrix printers as well as 17 input devices and 59 plotters. Regularly $139.95, the program is available for a limited time at $49.94.

Voyetra Technologies (Mamaroneck, NY) will feature its **Sequencer Plus** 65-track MIDI recorder/arranger/editor program for the IBM PC and compatibles, as well as other programs for creating music on computers.

Wendin, Inc. (Spokane, WA) will present **Wendin-DOS,** a multi-user, multi-tasking DOS lookalike system for IBM PCs and compatibles; the system runs virtually all DOS-based software.

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Princeton HX-12 Hi Res Color . 469
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Amdek 310 Amber. 158
Nanao 12" Hi Res Mono 158
NEC Multisync JC1401 Color . . .625
Samsung Color EGA 439

SOFTWARE
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Symphony 359/435
R-base System V . . . . . $Call
Wordperfect 4.1 269
DOS 3.10 85
D-Base III Plus 469
AutoCAD. . . . . $Call

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7.2 Mhz. 399
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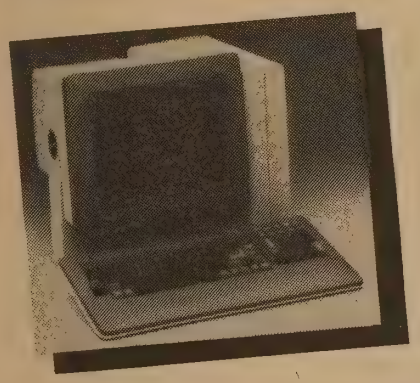

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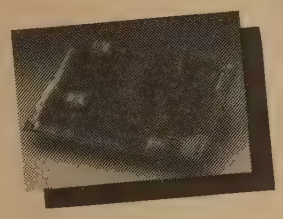

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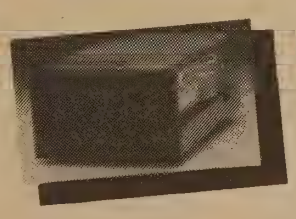

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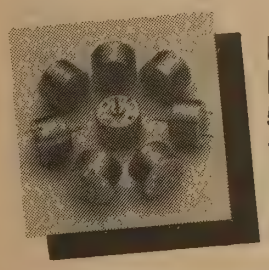

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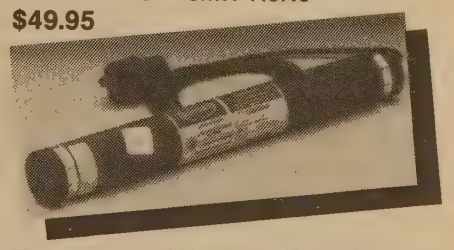

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So You Want To Be A Computer Consultant?

By Robert D. Athey Jr.

I receive calls almost daily on computer questions. Many of these calls are complex, and beyond my expertise. I therefore refer them to a wide variety of helpers in the computer community. Sometimes I'll pass the ball to a specific person. Most often, however, I'll refer the caller to the local user groups.

Some callers, however, still insist upon my help. If the question can be answered in a few minutes over the phone, I'll give it a try. But because computer consulting is my business, I try to keep such free advice short and to the point.

There are many new users who need help with the complexities of word processing, spreadsheets and database programs. These new users often cannot afford high-priced or pressed-for-time consultants. If you are interested in this type of consulting, and have the experience and the patience, this situation provides an excellent opportunity to start your own consulting business.

To do consulting of this sort, there are three main things to make sure of before you start.

First of all, make sure you and the client come to an understanding about exactly what help you are to provide. Believe me, there's nothing worse than having a current (or worse yet, a former) client mad at you because he believes you did not deliver what he wanted. It is best to get the job defined in writing. This may seem to be a pain for small jobs, but it is good discipline for the larger and more complex consultations down the line.

In computer consulting, never underestimate how long a job will take, as some people are slower to learn than others. The written job description should state what you will teach and how the client's progress will be measured. It should also include a time limit for the learning process.

The client should make a commitment to practice between sessions. This way questions and problems that arise during the user's own work can be dealt with the next time you get together.

You should also come up with an agreement as to the expenses, if any, you'll be allowed.

The second thing you need to do is prepare a fee schedule. I use a sliding fee scale that reduces the client's cost per hour as the number of hours increases. I have a printout from a spreadsheet template that breaks down the cost to the client by the hour, by total hours, and by the average after each successive hour. All this is not necessary for the consultant who uses a flat fee. But I find that a sliding fee scale encourages more usage.

The template I use is shown in the inset box. The letters across the top are column designations and the numbers on the left are line numbers from the spread sheet. The items in parentheses are equations I use to calculate what I need to know for billing clients as time passes on their projects. The X represents the highest amount I'll charge.

TEMPLATE FOR CALCULATING CONSULTING FEES

a	b	c	d	e	f	g	h
1							
2	**FEE SCHEDULE FOR CONSULTING**						
3							
4	Hour		Cumulative	Avg.$			
5	Worked	Rate,$	$ Total	that hr.			
6							
7	1	X	X	X			
8	2	X	(c8+d7)	(d8/b8)			
9	3	X	(c9+d8)	(d9/b9)			
10	4	X	(c10+d9)	(d10/b10)			
11	5	X	(c11+d10)	(d11/b11)			
12	6	X	(c12+d11)	(d12/b12)			
13	7	X	(c13+d12)	(d13/b13)			
14	8	X	(c14+d13)	(d14/b14)			
15	9	X	(c15+d14)	(d15/b15)			
16	10	X	(c16+d15)	(d16/b16)			
17	11	(0.9*X)	(c17+d16)	(d17/b17)			
18	12	(0.9*X)	(c18+d17)	(d18/b18)			
19	13	(0.9*X)	(c19+d18)	(d19/b19)			
20	14	(0.9*X)	(c20+d19)	(d20/b20)			
21	15	(0.9*X)	(c21+d20)	(d21/b21)			
22	16	(0.9*X)	(c22+d21)	(d22/b22)			
23	17	(0.9*X)	(c23+d22)	(d23/b23)			
-	-	-	-	-			
-	-	-	-	-			
42	36	(0.9*X)	(c42+d41)	(d42/b42)			
43	37	(0.9*X)	(c43+d42)	(d43/b43)			
44	38	(0.9*X)	(c44+d43)	(d44/b44)			
45	39	(0.9*X)	(c45+d44)	(d45/b45)			
46	40	(0.9*X)	(c46+d45)	(d46/b46)			

The third thing you'll need for consulting is a standard invoice form that is sent to the client at the end of the month. You can use a word processor template, but I prefer to do it with a spreadsheet. The use of the spreadsheet makes the inclusion of expenses (travel, mailing, telephone, subcontractors, etc.) and other fees easy to calculate. Admittedly, these may not show up on your jobs for a user who just bought an Osborne 1 or a Kaypro II at the flea market, but they should be taken into consideration.

The template I use for the invoice is shown in the second inset. You'll have to fill in the items in brackets. The parentheses are formulas for calculations.

TEMPLATE FOR CONSULTING INVOICES

a	b	c	d	e	f	g	h
1							
2	**INVOICE FOR CONSULTING SERVICES**						
3							
4					[date]		
5							
6							
7					[name]		
8					[street]		
9					[town]		
10					[state/zip]		
11							
12							
13	TO: [Client Name and Address]						
14							
15	Reference: [Purchase order or agreement]						
16							
17	[XXX] days since last invoice						
18	Unpaid amount from last invoice				[XXXXX.XX]		
19	Service charges from late payment				(0.0005*XXX*XXXXX.XX		
20	-	-	-	-	-	-	-
21			Subtotal		(f18+f19)		
22							
23	[X] hours at $100/hr.				(100*X)		
24	Telephone Expenses				XX.XX		
25	[XX] Miles at $0.205/mile				(0.205*XX)		
26	-	-	-	-	-	-	-
27			Total		(sum(f21:f25))		
28							
29							
30							
31							
32							
33							
34	NOTE: Payable within 30 days of invoice date. Late						
35	payments will be assessed a service charge of						
36	0.05% per day retroactive to the invoice date.						
37							
38							
39							
40							

Consulting is an up and down business. Some of the time you'll be swamped with more work than you can handle. Other times you'll look longingly at the phone or mail box. Use slow times to catch up on writing because busy times are very hectic. Feast or famine is what you can expect. But you can also expect to be somebody's hero when you solve the other guy's problem.

In other news, there's an interesting new remote bulletin board called CHEMSOFTWARE, based in Los Angeles and Massachusettes. The RBB will give you information on MSDS (Material Safety Data Sheets) and OSHA (Occupational Safety and Health Administration) requirements for the chemicals used in industry. It is sponsored by Marblehead Labs of Massachusetts, a consulting, testing and formulating organization for the paint industry. The phone in the Los Angeles area is (818)881-2586. The RBB operates with Procomm software at 8 bits with no parity and one stop bit.

Their representative invited me to dial them up recently at the Western Coating Symposium. He was telling me of their MS-DOS software for paint batch cards (the recipes paint makers use to mix paint) that ties the resulting paints to inventory control and MSDS sheets. Where will computers go next? □

Bob Athey has over 20 years of experience working on computers and runs his own company on chemical consulting and contract research. He can be reached through MicroTimes or at (415) 526-3541.

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Desktop Publishing On Your PC—Now

By Ken Milburn

Some companies have been waiting to implement desktop publishing until they could use their installed IBM PCs. The rationale is twofold: 1) It would be cheaper, since the PC is already there; 2) Less training would be required than if users had to learn a new system on the Macintosh.

Both these premises are a bit shaky. If your system is less than an AT with 30MB hard disk, it will need to be replaced or upgraded—at a cost approaching that of a Mac Plus with hard disk. And the laser printer (or its equivalent) required by the Mac also happens to be the only one that's really practical for publishing use on the PC. As for retraining, the screen/command design for DTP applications on the MS-DOS systems is a semi-clone of the Macintosh interface. It's an interface that's easily grasped, so that minimal training is required for use of the software. An understanding of the requirements for publication design is another matter, but that factor remains the same on either machine.

The justifiable reason to publish on the PC is that the available software makes it more efficient at producing the majority of corporate documents.

THE SOFTWARE

The only true WYSYWIG, designed-for-the purpose MS-DOS publishing software that's been shipping long enough to prove itself, is Xerox's *Ventura Publisher*. I mentioned that the PC application is more efficient for producing most "corporate" publications. That's because it can "read" the text created by word processors and other PC programs. You then "pour" it into a pre-defined *Ventura* page layout that tells the laser printer or typesetting machine how to make the page look—where headlines and subheads should be located and what size and style they should be; the formats for body copy; how many columns there are on a page, and so forth.

Ventura is quite flexible and powerful—and therefore complex. But the process of designing a page layout is a "point and click" exercise, so the learning curve is the trial-and-error one of learning what makes things look good. *Ventura* makes it easy to make changes if you don't like what you see.

Copyright © 1987 by Ken Milburn. All rights reserved. *Ken Milburn is a freelance writer on Microcomputers. His articles have appeared in numerous computer publications, including* PCWorld, InfoWorld, Computer Graphics World *and* MicroTimes. *He also does system configuration for small businesses. He can be reached at (415) 331-6296 or by sending E-mail to (ken) on The WELL, (415) 332-6106.*

The justifiable reason to publish on the PC is that the available software makes it more efficient at producing the majority of corporate documents.

You set up a style sheet by defining the dimensions of the page, number of columns, space between columns, leading between lines, etc. Then you specify how each section of copy is to be formatted and placed: headlines, subheads, headers, chapter titles, body copy, etc. You can name each of these, and they will appear on a menu. When you read in a text file it will be formatted as body copy. You can insert text for the heads, pull quotes and annotations—or you can highlight text with the mouse, then pick a section name from a sidebar menu—whereupon that block will be reformatted to suit the pre-defined style.

Once you've set up a style sheet, you can use it to format a page or an entire book, and viewing your text in the basic layout takes only seconds. That's why *Ventura*'s so good for standardized typesetting: academic reports, books, legal papers. If the copy comes from *Word, WordPerfect, MultiMate, VolksWriter* or *WordStar*, formatting commands like boldface, underline, italics and centering will be preserved. Even though the GEM interface it uses is very Macintosh-like and What-You-See-Is-What-You-Get, *Ventura* isn't as interactive or as flexible for designing on the fly as the Mac's prominent page layout programs, *PageMaker* and *Ready-Set-Go 3*. Its efficiency at standardized typesetting makes it better suited for straight businesses, but not so great for a graphic designer, art director or ad agency.

Ventura supports a wide range of monitors, laser printers, Epson-compatible dot printers and mice.

INTEGRATING OTHER APPLICATIONS

Since *Ventura* can typeset "plain" text from any ASCII file, you can insert a spreadsheet or a list of names from your database—provided that the originating application will re-direct printer output to a disk file. You can also insert either line-art (CAD) or bit-mapped ("paint") graphics. Line art is very accurate for technical drawings and will print at the highest resolution the printer is capable of. *Ventura* will insert drawings from *GEM Draw* and *Chart, AutoCAD's* .DFX files, *Lotus* and *Mentor* Graphics.

"Paint" images—more suitable for free-hand illustration—are formed with dots, so their definition depends on the density of dots the program forms. *Ventura* will insert "paint" images from either *GEM* or *PC Paintbrush*.

Since there are so many variations in "standard" hardware/software and software/software interfaces for applications running on PC/MS-DOS computers, it's important to keep all software systems within the same windowing program. That way, devices and drivers can be shared between applications uniformly.

If you are planning to pull in information from other applications, make sure that text output can be printed to disk or converted to ASCII. If you will need extensive illustrations, the most versatile tool kit would consist of *GEM Draw* and *Chart*, a drafting program that produces *AutoCAD* compatible files, and *PC Paintbrush*.

Using GEM applications will give you automatic compatibility with your laser printer and any fonts specified for it. *Gem Draw* is a quick and easy way to create simple line art, logos and diagrams. There are several image libraries available full of business "clip art." *GEM Chart* makes it easy to produce impressive looking "3-D" business graphs and incorporates a very slick system for designing word-charts.

If you have to do engineering drawings, you'll need a CADD program. *AutoCAD* itself may be a bit steep at $2,500, if your use is only occasional, but the same company publishes *AutoSketch* for a mere $80, and it's a piece of cake for even a beginner to use. For just a little bit more money, you can get even more "architectural" features in *GenericCADD*—but you'll want the drafting extensions and the *AutoCAD* conversion utility.

If you want to capture graphics from applications that don't have a direct interface to *Ventura*—or if you want to capture images with a scanner, you will benefit from Z-Soft's *PC Paintbrush Plus*. *PC Paintbrush Plus* is probably the champion of affordable (less than $150) paint programs for the PC, makes good use of EGA if you have it, and can capture screen images from any other program that produces images on your monitor. You can also use it to capture and enhance the image from any of the current crop of scanners for the PC.

The number of possible business uses for scanners goes far beyond the scope of this month's column. I hope to get into them in depth soon. For now, suffice it to say that they can quickly digitize the image from any photograph

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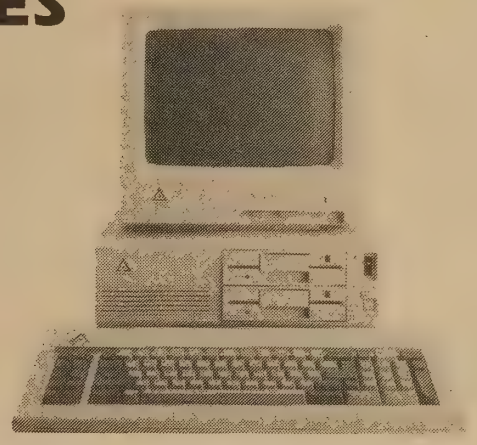

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or printed material. If you're not much of an artist—or simply don't have the time to be one—a scanner is a great way to pull images into your publications. Line art reproduces almost as well as the original. Images with lots of shades, like photos and illustrations, are going to look a bit pimply. Which is why it's nice to be able to use *Paintbrush* to edit and enhance them.

THE LASER CONNECTION, OR, POSTSCRIPT AND WHY YOU NEED IT

It might have made for a more logical sequence to talk about the practical configuration for PC hardware first, but the use of a laser printer is essential to quality publications. Moreover, unless your requirements for type styles and graphics are minimal, there are several reasons the use of a PostScript-driven laser is almost essential.

Most other lasers can only produce 1/4 or 1/2 page of full-resolution graphics and require that each change in type size be described as a separate font. So if you want to use Helvetica and Times Roman, each in three "point" sizes, you'll have to purchase and download *six* separate fonts. PostScript allows any typeface to be reproduced at virtually any type size without loss of resolution.

Page description languages provide the easiest-to-use and most efficient means for integrating illustrative graphics with publication-quality type and page layout design. PostScript is the page-description language used by nearly every DTP-related application running on either the MAC or the PC. So as new applications are developed, they are most likely going to have a PS (or Apple LaserWriter) driver. Many of the more sophisticated publishing systems running on super-micros and minicomputers also use PostScript, so it helps in providing a "connectivity" path, too.

PostScript also provides access to the largest number of true typesetting fonts—which is one of the reasons why only PS will "talk" to the Linotronic typesetting machines used by so many printing houses. The Linotronics 300 and 600 machines will produce magazine-quality (1,200 - 2,400 dpi) camera-ready copy exactly as it was designed on your computer.

You can see that the use of a PostScript laser printer can greatly expand your business' publishing talents. However, if you already own one or more Hewlett-Packard or Canon laser printers, all is not lost. One of the most complete lines of laser printers is manufactured by QMS of Mobile, Alabama. A subsidiary, The Laser Connection, makes a product called the PS Jet that replaces the top (controller) of any H-P or Canon laser printer. It has been on the market for several months in a version compatible with the Apple LaserWriter and semi-compatible with Diablo daisy-wheel printers.

The latest version, released just in time to test for this column, is called the PS Jet Plus. It not only gives you PostScript capabilities, but also complete compatibility with the LaserWriter Plus (eight more built-in fonts). It seems markedly faster than the LaserWriter (about 50%, according to TLC). But the big news is that it also features complete emulation of H-P's LaserJet and LaserJet Plus—and it also emulates H-P plotters and will do a full *legal-size* page of 300 dpi graphics. So now you can get publication-quality output from any application that supports any of those protocols.

I'm lucky enough to be using a new Mac Plus to help with an article on scientific publishing at the moment, so I was able to try out the new

Unless your requirements for type styles and graphics are minimal, the use of a PostScript-driven laser printer is almost essential. PostScript allows any typeface to be reproduced at virtually any type size without loss of resolution.

PS Jet with both the Mac and the (RAM Systems) 386. Haven't had time to try everything yet, but *Word*, *WordPerfect* and *Ventura* work fine in both modes; *Ready-Set-Go 3*, *MindWrite* and *SuperPaint* (on the Mac) print with no problems. If you have PC applications that aren't compatible with any of PS Jet's emulations, you might consider reading them into *Ventura* and then printing from there. It's an extra step, but the output is gorgeous. If you're considering purchasing new laser printers, you can buy the whole printer from TLC's parent QMS as the PS800+. Or, you can buy QMS' low-cost KISS laser printer, add the PS Jet and save $1,000 by putting the two together yourself.

THE PC HARDWARE CONFIGURATION

The systems I'm recommending here aren't cheap. You'll need a fast computer, big hard disk, laser printer, mouse and probably a large-screen, high resolution monitor. But I've tried to pick the components that will give you the highest return on your invested dollar. I've also tried to pick the systems that offer the easiest upgrade path from the components you already own.

The PC was originally designed to follow one set of hardware standards for text and another for graphics. Publishing requires integrating text and graphics, even if your publication contains no pictures. That's because it's only possible to create a variety of type-styles and fonts by "drawing" them. Only since the popularization of EGA as a standard has it become more fashionable and practical to create paragraphs in graphics mode and integrate it with text. Not all software publishers have caught up with this concept, and those that have aren't consistent in their support of various hardware standards. So if you're not careful to pick a versatile hardware configuration, you may find yourself unable to use some of the software you depend on.

One of the reasons IBM created this graphics/text schizophrenia is that it takes longer for the computer to draw a letter each time it appears on screen, instead of simply flashing a pre-defined character on the screen. Faster processors, like the 80286 in the IBM/AT, are capable of making this problem invisible. The faster your computer, the better. Don't consider spending much time doing publishing on anything less than an 8MHz AT. Better yet, upgrade your XT or AT with a 80386 motherboard like the one from RAM Systems. At just under $2,000, it's not a cheap solution, but it sure beats tossing out your present machine and buying a $7,000 Compaq DeskPro 386. I'm recommending the RAM motherboard because I've been using it for several months and know that it works as advertised. Some of the 386 add-in cards may do much the same for you, but I haven't gotten my hands on any of them yet.

You will need a hard disk. If you already have one, you may want to upgrade it to a larger, faster one. Font and graphic files are hungry for storage space. A full page, 300 dpi graphics image needs about 1.5 megabytes of memory (that's why the LaserWriter has 2MB on board), so you can see that anything smaller than 20 or 30MB will fill up pretty fast unless you back up frequently. Furthermore, you'll probably be loading quite a few disks' worth of new applications software onto your system.

The cheapest practical display combination is a Hercules compatible card and monochrome monitor. Color doesn't help much in desktop publishing, since laser printers are all monochrome output devices. Still, it may be useful in some of the other applications you are running, for instance, creating presentation graphics. If you need color and want to get away with a single monitor and card, pick an EGA card and MultiSync monitor. Either of these choices can be used as the "standard" monitor in combination with a "full page" monitor like the Wyse, Sigma, Viking or Genius.

You'll get the most productivity out of a black-on-white, oversized, ultra-resolution monitor that can display two full facing pages with readable 8-point text. That's because you spend less time zooming in and out to see how well your page design balances and printing "proof" pages. The most cost-effective (and compatible) of these monitors is the Wyse 700 at $995 for both display card and monitor. Competitive monitors may require a second monitor and generally cost 50-125% more. Though most are larger and of higher resolution, they are generally compatible only with *Windows*, *GEM (Ventura)* and *AutoCAD*. Your other PC applications will have to run on another monitor.

Finally, you will need a mouse. Arrow keys are too slow getting the cursor from one corner of the screen to another. Digitizing pads are costly and aren't supported by most DTP programs (unless they emulate a Microsoft mouse). Most up-to-date publishing software for the PC runs in a "point-and-click" environment similar to the Macintosh. You'll find it a pain to have to wait for the direction keys to move the pointer to the menus and to sections of text that you want to select for formatting. Pick a Microsoft mouse, or one that's fully compatible, like the Logitech C7+ I've mentioned in past columns.

COST AND THE FUTURE

Assuming you already own an AT, here's what you can count on spending. These are "asking prices." Shopping the advertisers in these pages should net you some significant discounts.

Let's assume you own the basic 640K AT. A 39ms hard disk can be had for around $700. The Wyse 700 monitor is $995. Count on about $120 for the mouse. A QMS KISS laser printer and PSJet are $1995 and $299 (that's about $1,000 less than the list for most PostScript-only printers). *Ventura Publisher* goes for $895. That's $7,700 for turning your AT into a very competent office publishing system.

If it sounds like too much trouble to put all this together—and if you don't already own a hard-disk equipped AT—consider the very reasonably priced pre-packaged publishing system from AST. It includes *Ventura Publisher* and most of the equivalents in this recipe, but you'll surely miss PostScript and the other software tools I've described, depending on your needs. □

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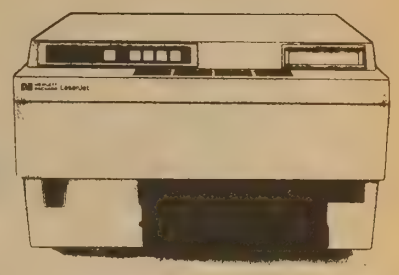

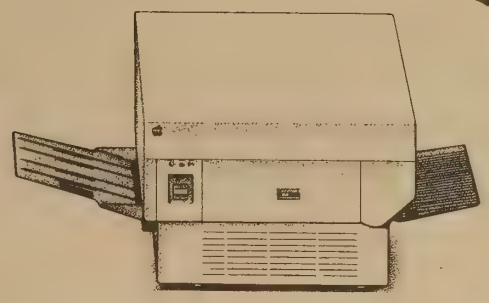

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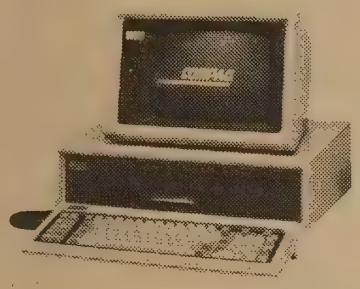

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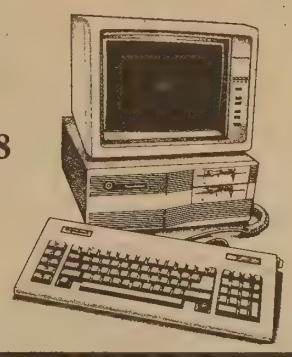

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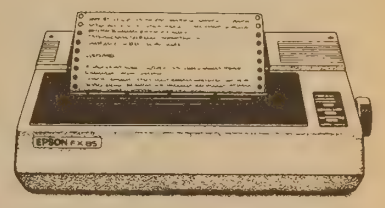

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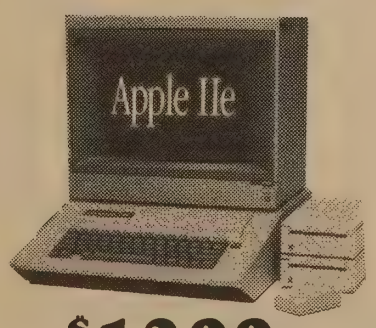

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The Look And Feel Of Real UNIX

By Bennett Falk

The UNIX/DOS dichotomy provides an odd perspective on all the foofaraw over the "look and feel" of software. When I first started using UNIX, I went to great lengths using aliases and shell scripts to make UNIX look like the CP/M system I had been using at home. And for as long as I've had a PC, I've wanted something like a UNIX environment on it.

For people who work with UNIX, it is helpful to have an inexpensive and thoroughly compatible UNIX environment in which programs and techniques which will migrate to the UNIX system can be developed.

It became clear over time that the UNIX features of interest in the DOS world were not the system internals, but the utilities and the user interface. Compatibility with DOS file structure and applications also emerged as an important consideration.

The MKS Toolkit from Mortice Kern Systems (43 Bridgeport Road East, Waterloo, Ontario N2J 2J4 CANADA, 519/884-2251) is a set of DOS compatible utilities similar to those found on UNIX systems, and it's a very interesting package.

GETTING WHAT YOU SEE

First of all, the *Toolkit* is *not* a complete UNIX system—all its files are loaded into the standard DOS filesystem, and can be used from DOS with no difficulty. The toolkit does not magically endow your computer with either multi-user or multi-tasking abilities. It doesn't even attempt to remake the DOS filesystem on your hard disk (and indeed, you don't even need a hard disk to use the toolkit).

What this product *does* do is provide, at a modest price, lifelike replicas of about 70 of the utilities that make UNIX fun to use. The package includes the pattern scanning language "**awk**", the "**grep**" family of file scanning utilities, the stream editor "**sed**", a "Korn shell compatible" command interpreter "**sh**", and the much-loved screen editor "**vi**". There are enough other utilities in the package that it could easily be used to prototype and de-bug UNIX shell scripts. (Even the arcane "**rev**" utility, which reverses lines in a file, is included—you too can turn things around.)

MOVING FILES BETWEEN DOS AND UNIX

In addition to providing a DOS environment in which UNIX compatible shell programming is possible, the system also includes several utilities ("**dd**" and "**cpio**") to facilitate importing and exporting files between DOS and UNIX.

DOS ordinarily does not allow users to get at the "raw" disk drives, preferring to interpose a filesystem between the user and disk storage devices. In UNIX it is not uncommon for archiving programs to address raw devices. The *MKS Toolkit* provides this capability, though not in the most straightforward way. Whereas in UNIX the program "**cpio**" can address diskettes more or less like streaming devices, the MKS "**cpio**" cannot. It must be used in conjunction with the "**dd**" command, which can read and write diskettes that are not DOS filesystems. This is a minor inconvenience in return for the ability to read and write **cpio** archives from any UNIX system. The **cpio** included in the *MKS Toolkit* produces archives fully compatible with UNIX "**cpio**".

AHHH, "VI"!

The "**vi**" that comes with the toolkit is compatible with *vi 3.5* and is truly a delight. *Vi* is a large program, commonly well over 100K on UNIX systems. Various implementations of UNIX and UNIX look-alikes have included *vi*, but these products are often cumbersome. In a true multi-tasking system, the 100K+ *vi* program must share main memory with a kernel that presides over task scheduling and a shell which acts as a command interpreter. On an XT trying to do multi-tasking with 512K of memory, *vi* can be *very* sluggish.

Some *vi* implementations have attempted to improve performance by cutting back on features— the "Z" editor from the makers of *Aztec C* is a reasonable subset of *vi* capabilities in an executable file that is only about 35-40K.

The *vi* implementation that comes with the *MKS Toolkit* splits the difference. The program itself is just over 80K in size. Because it is running under DOS, it doesn't really need to share memory with anything else, and it seems to perform quite well.

Several interesting changes have been made. The video display used by the MKS implementation is memory mapped and quite fast— fortunately it does not try to simulate the relatively slow video that is common on UNIX systems. Nor does this implementation bother with getting terminal information in the standard UNIX way— there is no "**termcap**" file to be read as the program is loaded.

Vi is a "modal" editor. The user selects any of three different "modes" during an edit session, with different capabilities available in each mode. Ordinarily there is no on-screen indication of what the current mode is in the UNIX versions. The MKS "**vi**" indicates mode quite handily by changing the cursor attribute— "insert" mode is marked by a blinking block cursor, "cursor movement mode" is marked by a solid underline cursor.

It's great fun that the MKS "**vi**" also allows "shell" escapes to run other programs and has the ability to run an external command on the current edit buffer.

The MKS "**vi**" seems to have some problems with recognizing partial lines at the beginning of large pieces of text. Deleting text from the middle of a paragraph to its end seems to consistently delete only full lines below the cursor, leaving in place any partial line that contains the cursor. Otherwise the editor behaves quite well.

THE MKS SHELL

The original UNIX command interpreter is known as the Bourne shell. It is a relatively compact program which functions equally well as a job control language and ad hoc programming tool. For most of the commercial life of UNIX, the main competition to the Bourne shell has come from the C-shell developed at UC Berkeley. The C-shell has a number of features (most notably command aliasing and "**history**") that are absent from the Bourne shell. It also has all the disadvantages of a large program—it takes more time to load and may not run as efficiently as the Bourne shell.

In recent years the Korn shell has emerged as an alternative to these traditional UNIX command interpreters. It offers the efficiency of the Bourne shell as well as the additional features for which the C-shell is prized.

The MKS implementation claims to be Korn shell compatible, and is certainly an excellent attempt to create a UNIX-like shell for DOS. Certain features of UNIX shells are not supported—commands cannot be put in background and filenames must obey the DOS conventions.

The manual warns users that the shell may collide with memory resident programs (such as *SideKick*) which will not anticipate the dynamic memory demands of the shell. Still, in a few hours of use, the MKS shell had fewer conflicts with DOS executables than other shells I've used.

The shell's aliasing and history features work, but the command substitution mechanism is clumsier than that of the C-shell. In addition to pipes (which connect the output of one command with the input of another) and redirection of both input and output, the shell supports "embedded" commands. In the MKS shell, as in UNIX, any command may contain another command enclosed in grave (` `) marks—the enclosed or embedded command is executed first and its output, if there is any, appears in the larger command line in place of the embedded command. This is quite handy for introducing a list of items into a command.

All in all the *MKS Toolkit* is quite a bargain for anyone who wants the "look and feel" of UNIX on a DOS budget. □

List of utilities included in the *MKS Toolkit*

awk	banner	basename	c	cai
cat	cd	chmod	cmp	comm
cp	cpio	ctags	cut	date
dd	dev	df	diff	dirname
du	echo	ed	egrep	expr
fg	fgrep	file	find	getopt
glob	gres	head	help	jobs
join	kill	lc	line	ls
mkdir	mv	nm	od	paste
pg	prof	ps	pwd	rev
rm	rmdir	sed	sh	size
sleep	sort	split	strings	strip
sum	switch.com	sync	tail	tee
test	time	touch	tr	uniq
unstrip	vi	wc	which	

Bennett Falk is an Application Specialist for BASIS, Inc., and has been enthralled by UNIX, its uses and users, for quite some time now.
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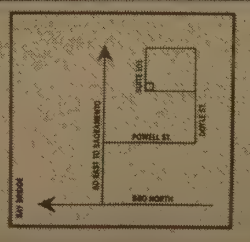

Aegis Animator:

A New Twist On The Mouse-To-Animator Relationship

By Helmi Kobler

Every once in a while a piece of software is released that even the most meticulous, nit-picking critic finds hard to fault. The product is sharp, well-thought-out, and reeks of professionalism. It incites ooohs and ahhhs as it's demoed on a dealer's floor, and doesn't become stale or dull with a few days of use. This is the case with Aegis Development's *Aegis Animator*, a rather new $79.95 package that should be on every sane ST dealers' shelves by now.

Though it's not the first animation program the ST has seen, *Aegis Animator* is a groundbreaker in that it's the first package that can be used to create complex and involved animation routines with a few drags and clicks of the mouse. Running in the ST's 16 color low resolution mode, *Animator* not only lets you design simple animations, such as moving a polygon from point A to point B, but also makes available a slew of other advanced effects. You can rotate that polygon or spin it on its X or Y axis. You can shrink or enlarge it as much as you like. You can change its color, its shape and even define the speed at which it moves.

Besides animating the polygons, circles, stars and blocks created with the program's graphics editor, you can also capture and animate segments of pictures, called "cels" in *Animator* lingo, made with Atari or other compatible software. This is extremely useful when you'd like to work with multi-colored, finely detailed objects that can't be created without a full-featured paint program. Imported cels, however, are limited only to basic from-here-to-there animation. For instance, *Animator* can't spin a *NEO*-drawn bird on its X or Y axis, rotate it in a circle and finally transform it into a sleek jet fighter. This is possible, but you have to create a good number of cels, each depicting the bird in a slightly different position, and then use *Animator* to play them back one by one for the desired effect. This takes some time, of course, but allows for complex and detailed animations that couldn't be accomplished with just a few blocks, triangles and circles.

Complete *NEOchrome* pictures can also be loaded into *Animator* for use as "backdrop" scenes that reside behind animations, much like matte paintings are used in movies. Backdrops may even be animated through color cycling.

Animation sequences, called scripts, are based on a concept known as "tweening." Tweens are short segments of time in which acts of a script are performed. Tweens allow animations to be broken down into pieces and designed step-by-step. They're produced one at a time and then shown together in the animation script. As a simple example, in creating your animations you could paint a triangle in tween one, rotate it in tween two, move it to the left in tween three and finally shrink it into oblivion in tween four. When the entire script is played, each tween would be shown in progressive order.

Animator also provides a storyboard feature for editing your animation scripts. More like a film editor, it lets you work with up to six scripts simultaneously. Each script is placed in a separate window where unwanted tweens can be cut out, entire animations may be spliced together or completely destroyed. This is really useful for polishing up your final product.

Looking over this brief review, I realize that I can't fully explain Aegis *Animator* in a few hundred words. It's a very deep program that takes a lot of time to explore and even more to explain. But in short, it's an extremely powerful and flexible program that can bring just about any graphics image to animated life. Use it to storyboard video game ideas, create product demos or animate advertisements. Or, just sit up all night with it and design cosmic animations that are sure to amaze your friends. My own applications have included using it to create animated advertisements for a user group I belong to.

In any case, *Animator* is a real winner, and probably not the last we'll see from Aegis Development. The company is working on a number of additional ST titles that should be released by early summer. Look for *Art Pak ST*, a collection of professional art compatible with *Aegis Animator*, *Arazok's Tomb*, a graphics adventure game, *Aegis Speed Speller*, and Doug Clapp's *Word Tools*. If you'd like to get in touch with Aegis, write them at 2115 Pico Boulevard, Santa Monica, CA 90405.

OTHER NEW SOFTWARE

Some other worthwhile software has come my way lately. One title is *Word Writer ST*, a competent word processor from Timeworks, Inc. (444 Lake Cook Road, Deerfield, Illinois 60015). Timeworks is a big productivity software developer that has recently started to support the ST. Besides its word processor, the company has also released a spreadsheet called *SwiftCalc ST*, a database, *Data Manager ST*, and Sylvia Porter's *Swiftax*, a program that helps prepare federal income tax returns.

At first glance, the non-copy protected *Word Writer* seems to resemble Atari's well-known *1st-Word* software. It's GEM-based and compatible with *1st-Word* documents, but goes on to correct many of *1st-Word*'s shortcomings. Besides the basics you'd expect such as What-You-See-Is-What-You-Get document display, multiple windows, on-screen text styles (italics, bold, etc.), headers and footers, easy editing and cut and paste capabilities, *Word Writer* throws in welcomed major features such as an integrated five-level outliner and a 90,000-word dictionary. The program can spell check documents once they're completed or in real time, as you type. Although the program is very complete, it's unfortunate that new words can not be added to the existing dictionary.

Other minor enhancements are the ability to format text throughout an entire document instead of by paragraph alone (*1st-Word* users can appreciate this), keyboard alternatives for all major functions and a status feature that gives page, line, word, character and free memory counts of documents.

Word Writer doesn't sport all the bells and whistles other soon-to-come ST word processors are expected to have. For instance, graphics can't be incorporated into documents, multiple columns can't be created and GDOS is not supported, meaning multi-font documents are out of the question.

But the program is nonetheless a workhorse, and does what it's equipped to do well. Also, Timeworks has revisions in the works which will add user-expandable dictionaries and a 60,000 word-integrated thesaurus. This new release is expected in a couple of months, with a GDOS version to follow later on. If you're interested future *Word Writer* versions, there's little reason to hold back on the current software. Timeworks has a very reasonable update policy where they'll supply registered owners with updates, including new disks and manuals, for around $30 or less, depending on the extent of new features. But for $79.95 retail, the current *Word Writer ST* is a good deal anyway.

As a parting note, I have some "coming soon for the ST" news. Brøderbund, one of the biggest names in the entertainment software business, is bringing its *Print Shop* software over to the ST for summer release. The company is also working on other ST titles, but wasn't willing to give me any specific names. I'm hoping, though, that one might be *The Ancient Art Of War*. In any case, an ST version of *Print Shop* is great cause for celebration because it represents the ST's acceptance by yet another accomplished company.

And speaking of accomplished companies, Microsoft Corp. seems to be eyeing the ST a bit lately. It's common knowledge that Microsoft is working with Atari on an ST version of Microsoft *Word*, but did you know that there are plans for an ST port-over of *Excel*, Microsoft's hit Macintosh spreadsheet? Perhaps even an ST version Microsoft *Works*, an integrated application that includes word processing, database, spreadsheet and telecommunications functions. Although this might seem to be the product of an overactive imagination, this information comes from a reliable and experienced source. It probably won't be verifiable for a while yet, but keep it in mind. □

Helmi Kobler took his first step into the computer world in 1983 when he walked out of Macy's with an Atari 800 in his arms. Still an Atari user, he's now inseparably attached to his ST. He can be reached through MicroTimes *or e-mail <helmi> on The WELL at (415) 332-6106.*

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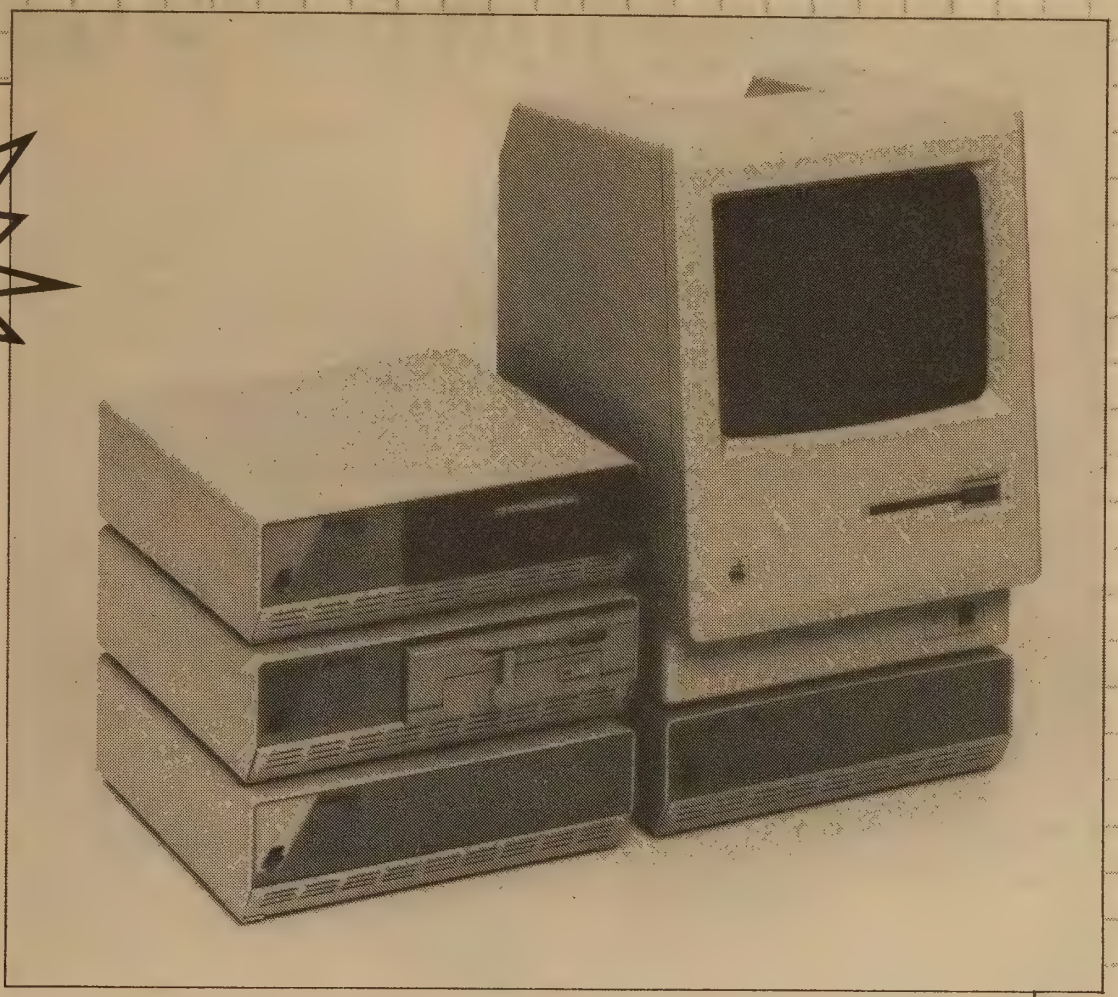

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DOS SOLUTIONS

Speeding Up The Job

By Wayne A. Yacco

This column continues to examine considerations for writing and using batch files. Efficient batch files are useful in more circumstances than their slower alternatives.

The batch job for this month is actually a sample modification to **AUTOEXEC.BAT** that allows selective inclusion of commands. Using a similar approach, each time you boot up, you can customize your system with a few "Y" or "N" keystrokes.

Last month we suggested pipelining the text of an **ECHO** statement as an alternative to redirecting a limited amount of input from a file. A second issue, which the pipelining solution addressed, is a reduced need for remarks regarding the now-eliminated extra file. This can be significant in a batch file, even if not because of storage or memory requirements, because each set of remarks in a file slows down processing. It is good practice to use a GOTO command to branch around only a few remarks. If there are many sets of remarks, however, efficiency will suffer despite the use of control transfers. Since **COMMAND.COM** is an interpreter, it searches for each destination, from the beginning of the file, every time it is referenced in a GOTO.

Unless batch files are processed to their best advantage, they can be very time-consuming. They will be too slow for many applications that require large jobs. Fortunately, substantial improvements are obtainable if the proper hardware and software are available. To a lesser extent, later versions of DOS have faster command processors and can offer some improvement over earlier ones.

Most performance degradation is due to the characteristics of the storage device on which the batch job is stored. This is because the job processor, **COMMAND.COM,** suffers from one of the same limits shared by all memory-resident programs. Memory-resident programs must have their share of memory allocated when they are loaded and still allow the application programs to have maximum access to the available resources.

When **COMMAND.COM** processes a batch job, the limited amount of work space available causes it to make repeated accesses to the job file in on-line storage. The faster that storage is accessible, the faster the job will be executed. Placing the batch job in a RAMdisk, such as the **DOS VDISK,** provides the optimum environment for batch processing. A hard disk is an acceptable substitute for a RAMdisk for most jobs. Truly fast hard disks will access jobs so quickly that processing may be nearly indistinguishable from a RAMdisk-based job.

DOS allows the inclusion of a **PATH** in the **ENVIRONMENT** to specify where the command processor should search for programs, external commands and batch jobs. Locations on the **PATH** are searched in the order they occur on the **PATH.** If batch jobs are kept on a RAMdisk, then their permanent storage location should not be on the **PATH** before the RAMdisk location.

The **PATH** is specified with the **PATH** command. For example, **PATH=E:\RAMJOBS;C:\DOSFILES;C:\BATFILES** might be used to specify a path to a RAMdisk directory containing some of the system's DOS utilities and batch jobs. This directory must precede the hard-disk directories which contain the permanent copies of the same files. Use **PATH** without a parameter list to display its current setting. (The **SET** command will display the entire environment including the current path and can be used to set the path as well.)

On an IBM PC/AT the RAMdisk can be placed in extended memory (above the DOS one-megabyte memory limit). This allows practically anything to be retrieved from RAM including all of the DOS utilities, batch files, and **COMMAND.COM.** Large memory-intensive data base files, such as dictionaries and thesauruses, that require frequent random lookup, are also good candidates.

Aside from the matter of storing jobs on the right media, the operating characteristics of the command processor will impact processing speed. **COMMAND.COM** is divided into a resident portion and a transient portion. The transient portion often requires reloading into memory, and the storage medium from which it is loaded will have the same impact on processing as does a job file's medium.

DOS includes provision for a **COMSPEC** in the **ENVIRONMENT** to allow designation of the command processor's location. DOS uses the **COMSPEC** specification to search for **COMMAND.COM.** If the command processor is loaded from a RAMdisk it can significantly speed up processing. **COMSPEC** may not be referenced first, however, while executing commands from the root directory of the boot drive. (This is just one of several arguments for storing the minimum number of files in the root directory. Others include protection from certain side effects, better disk organization and limits on the number of directory entries.) The **COMSPEC** is specified with the **SET** command.

Earlier versions of the DOS command processor have smaller resident portions and may require more time to load the transient portion as a result. Depending on processing requirements, they may also require more frequent loading of the transient portion. Employing the above improvements will have a correspondingly greater effect.

This column has provided suggestions that can improve the processing characteristics of batch jobs. Using these suggestions can allow batch jobs to be employed in applications for which they would otherwise be unsuitable because of their potentially-slow processing speed.

Implementation Notes

This month's **AUTOEXEC.BAT** file includes statements that can be used to conditionally include the transfer of disk files to a RAMdisk. You should change the contents of **DRIVE_E.BAT** to the command lists that suit your needs and rename the file with a label descriptive of its task. There is no limit to the number of such conditional jobs that can be added to **AUTOEXEC.BAT.** □

```
echo off
goto :enddoc    A U T O E X E C
rem  ********************************
rem     This job creates a PATH to the following
rem     directories:  E:\,  C:\DOS,  c:\DOS\BAT,
rem     c:\DOS\UTIL, and C:\.
rem
rem     BREAK and VERIFY are set ON. the DOS
rem     prompt will include the current directory.
rem  ********************************
rem
:enddoc
path e:\;c:\dos\bat;c:\dos;c:\dos\util;c:\
ctty nul
command \c c:\drive_e.bat
ctty con
prompt $p$g
break on
verify on
cls
goto :skip
rem
rem  ********************************
rem     The MORE command displays the contents
rem     of the file GREET.DOC one page at a time.
rem     GREET.DOC is a reminder file which lists
rem     the day's agenda.
rem  ********************************
rem
:skip
more < c:\greet.doc
:end_of_file
```

```
echo off
goto :enddoc     D R I V E _ E
rem  ********************************
rem     This job copies files to VDISKS. The batch
rem     files are copied from drive C: to E:\ and from
rem     drive D: to E:\D. The TURBO LIGHTNING
rem     dictionaries are transfered to F:\LIGHT.
rem  ********************************
:enddoc
ctty con
echo Terminate job to omit transfer of files to VDISKS.
pause
ctty nul
copy c:\command.com e:\
copy c:\dos\find.exe e:\
copy c:\dos\more.com e:\
copy c:\dos\sort.exe e:\
copy c:\dos\bat\*.bat e:\

del e:\ipl2.bat
del e:\srpath2.bat
del e:\d2.bat
del e:\go2.bat

md e:\d
copy c:\command.com e:\d
copy d:\bat\*.bat e:\d

del e:\d\srpath2.bat
del e:\d\c2.bat
del e:\d\go2.bat

copy d:\light\*.dic f:\light

ctty con
exit
:end_of_file
```

Wayne Yacco is an independent data-processing consultant with a practice in the San Fernando Valley. Since 1980, he has assisted clients in the implementation of microcomputer-based systems. Questions may be sent to him at P.O. Box 4239, Burbank, CA.

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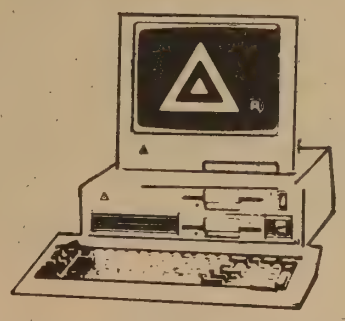

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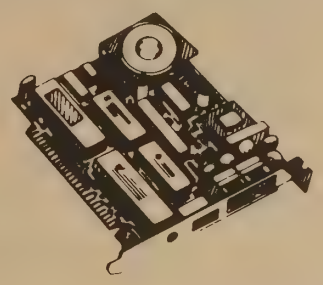

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Indexing With dBASE Relations

By Warren Sirota

In this month's column, we will stray from product perusals and return to our occasional examination of *dBASE* programming techniques.

RELATIONS AND INDICES

The *dBASE* command **SET RELATION TO** enables a common field in two files to serve as a connection between them. Let's consider again one of our old standby relational examples: CUSTOMERS and INVOICES, as shown in Figure 1. This is an archetype of the situation where two files are involved in a many-to-one relationship (soap opera, *Days Of Our Files*, to air next season). There may be several invoices for any customer. The two files are tied together by the Customer Code, abbreviated as a field name to CUSTCODE. In order for the relation to work, the Customer file has to be indexed on CUSTCODE.

Figure 1

The INVOICES and CUSTOMER data files, the relation between them (the arrow), and the code to set up that relation.

invoices.dbf

Field Name	Type	Width	Dec
INVNUM	Numeric	5	
INVDATE	Date	8	
INVAMT	Numeric	8	2
CUSTCODE	Character	2	

customer.dbf

Field Name	Type	Width
CUSTCODE	Character	2
CONAME	Character	30

```
* setup.prg
SELECT 1
USE CUSTOMER
INDEX ON CUSTCODE TO CUSTCODE
SELECT 2
USE INVOICES
SET RELATION TO CUSTCODE INTO CUSTOMER
```

Figure 2

Listing invoices ordered by customer name

```
DO SETUP && setup.prg is shown in figure 1
SELECT INVOICES
INDEX ON CUSTOMER → CONAME + STR (INVNUM, 5) TO RPTORDER
LIST CUSTOMER → CONAME, INVNUM, INVDATE, INVAMT
```

This type of relation is very convenient for listing out invoices, because you can have your program issue *dBASE* commands like "**? INVNUM, INVDATE, CUSTOMER → CONAME, CUSTOMER → ADDRESS**" to print out the customer information associated with a particular invoice. Listing invoices ordered by customer company name, however, is a bit trickier, as it involves the use of an index for the INVOICES file that is based upon the CONAME field in the CUSTOMER file. Figure 2 shows a program which will accomplish this.

So far, so good. This procedure works pretty well, but it reindexes the INVOICES file every time it executes. This could take an uncomfortably long time if the file contained several thousand records, and if the listing was an everyday activity (as well it might be—people in the front office might want to see a list of invoices for a particular client, for instance, which would involve the same index considerations). The obvious solution is to try to maintain RPTORDER as a permanent index. This is what you do with normal orderings of files, like the CUSTCODE index for the CUSTOMER file; however, the technique can lead to disaster if used with a multi-file ordering such as this, because these files can be created but not maintained.

In particular, if one were to change the CUSTCODE for a particular invoice (to correct an error) and then to re-issue the **LIST** command, the new ordering that should be maintained in index RPTORDER would not reflect the change. If a company name were to change in the CUSTOMER database (not so unlikely in these days of merger and takeover), even with the relation and index in place as we've done in Figure 1, the index would not be maintained correctly.

This basically means that you can either completely reindex the invoices every time you want a listing or search based upon the CONAME ordering, or you can reindex it whenever changes are made to either the INVOICES or the CUSTOMER files which would affect the accuracy of the indices. You are faced with a trade-off—you can either make your user wait while changing data, or you can make him/her wait while looking for data. Your life as a programmer is simpler if you opt for the latter choice, because you don't have to keep up with changes to the files. When the time comes to report, you just reindex. However, the limited patience of the long-suffering user of your program is likely to be more compelling than your natural desire to keep the program simple. If they use the search and report functions more frequently than the update functions, you must optimize for search and report, triggering reindexing operations on the files when appropriate during the update process instead.

A SUGGESTED SOLUTION

The only solutions to this dilemma can come from Ashton-Tate. Index maintenance needs to be aware of the relational environment. There has to be some way for the programmer to specify that an index such as RPTORDER should be updated as changes are made to the CUSTOMER file.

There are many ways of accomplishing this. One way of doing it would be to add a **MAINTAIN** command, which would be used as shown in Figure 3.

Figure 3

An illustration of how the suggested MAINTAIN command might work.

```
SELECT 1
USE CUSTOMER INDEX CUSTCODE
SELECT 2
USE INVOICES INDEX RPTORDER
SET RELATION TO CUSTCODE INTO CUSTOMER
SELECT CUSTOMER
MAINTAIN INVOICES → RPTORDER
* then we can go on to add,
* change or delete records
* in the customer file.
```

As long as we're fantasizing about *dBASE IV*, though, we may as well go whole hog. The best improvement that could possibly be made to *dBASE* (or to *Clipper*, *FoxBase*, or any other *dBASE* substitute), would be to add a strong form of the **SET RELATION TO** command. The syntax of the new command must be an extension of the old, for compatibility reasons, so it might be SET RELATION TO **<expression> INTO <database name> [STRONG]**. One effect of this command might be to allow the maintenance of indices such as RPTORDER. Another could be to prohibit the deletion of CUSTOMER records which had INVOICES pointing to them, or to warn the user that all such INVOICES would be deleted along with the customer record. Additional functions should also be supplied so that the programmer could easily know about cross-references without lengthy searches.

Regardless of whether or not Ashton-Tate chooses to take this unsolicited advice, the techniques of indexing on fields involved in a relation are important to learn for certain common data extraction needs. It is also important to know the pitfalls awaiting the unwary. □

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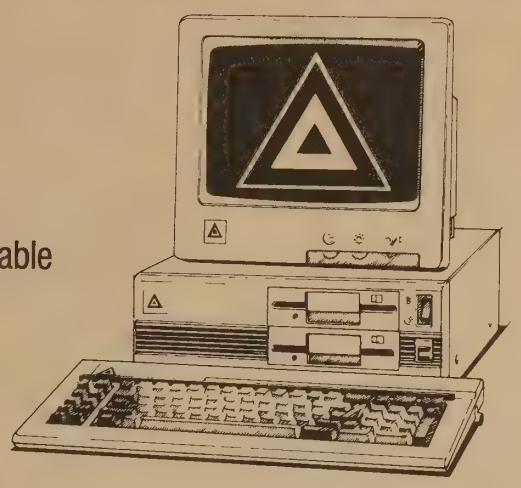

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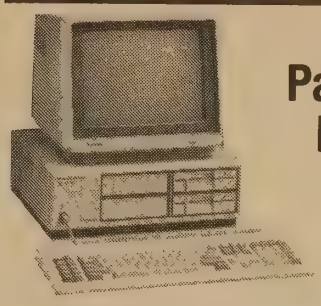

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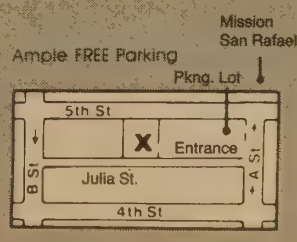

Capitol Hill And Telecomm:

What The Government's Up To, And How It Affects You

By Brock N. Meeks

Time was, not long ago, that dialing into a remote computer carried with it little responsibility. You simply logged on, looked around, made a few comments and logged off. Then came news of teenage "hackers" worming their way into various remote computers. Suddenly, anyone with a modem was suspect.

A massive education program finally convinced the public that modems could be used for things other than wiping out a bad credit rating and playing global thermonuclear war. The medium's innocence was only slightly tarnished.

Today anyone involved in telecommunications is playing in a hardball league: there is no more room for innocence. Every week, or so it seems, another ruling, proposal, or bill is introduced at the federal level that affects telecommunications in some way. Keeping abreast of the what's happening in the telecommunications world gives you a unique opportunity to have a voice on the eventual direction of the medium. The following items were gathered from a recent round of "federal footwork"; I thought you'd like to know about them.

PACKETGATE: PART II

In an earlier column I outlined a proposal presently before the Federal Communications Commission (FCC) called "Computer Inquiry III." The proposal, if passed, could double the cost you now pay for using commercial information services, such as The WELL or CompuServe.

Adding fuel to the debate over Computer Inquiry III, the Justice Department released a 210-page report on February 2, firing the first salvo in a controversy that may surpass Ma Bell's divestiture itself in terms of high stakes and strongly held views.

The report recommends that U.S. District Judge Harold H. Greene (the presiding judge in the Bell divestiture ruling) get rid of most restrictions placed on the Bell operating companies. The report's timing comes conspicuously close to the FCC's final ruling on Computer Inquiry III.

An official for Telenet, who spoke on the condition his name not be used, said: "The timing of this report's release is obviously a political move. The (Justice) Department is acting like the FCC has already approved Computer III; they're tossing their hat into a ring that doesn't even exist."

The Justice Department is recommending that government "get out of the way" of the telephone industry to create "a more competitive marketplace." The Justice report relies heavily on a 1000-page study prepared by the department's consultant on the matter, Professor Peter Huber. The study, entitled "The Geodesic Network," provides what Justice termed "the factual basis for the recommended changes in the decree restrictions."

Approval by Judge Greene would mean regional firms would be allowed, for the first time, to sell network information services (such as CompuServe), provide long-distance services outside their home territories, and manufacture equipment.

Such a court decision is at least a year away and would follow months of controversial arguments and testimony over the merits of the recommendations.

But other information and long-distance companies that would feel the impact of such increased competition were quick to condemn any relaxation of the rules. An MCI official who wished not to be identified said, "This [recommendation] paves the way for creation of seven new, competitive AT&Ts."

Information services that could be provided under the recommendation include voice mail, voice storage and retrieval similar to services provided by a sophisticated answering machine, and data processing. Under this ruling, the Baby Bells could even support their own commercial online networks, similar to CompuServe, The Source, or The WELL.

COMPUTER RADIO BOOST

"The ruling nobody heard," or so it would seem, recently came out of the FCC. The ruling could make packet radio the "next wave" in microcomputer communications.

Packet radio, as you may recall, is a technology born from the union of amateur radio and computers. Instead of using a telephone line to send digitized computer text (or binary data), a packet radio rig sends and receives over the public airwaves—free of charge.

A snag in the widespread acceptance of packet radio is that to operate a packet radio set-up you need an advanced amateur radio operator's license. To acquire such a license requires that you be tested on some fairly technical knowledge and prove that you have a more than casual proficiency in Morse code. In other words, you have to "pay some dues" before getting on the airwaves with packet radio.

This system of allowing only higher-class license holders to enjoy packet radio is arcane and serves no justifiable purpose. The present system simply makes the airwaves less crowded —an environment relished by old time amateur radio operators ("hams"), to the exclusion of possibly tens of thousands of potential packet radio users. However, the FCC's new ruling changes all that.

The FCC ruling gives Novice-class hams the authority to operate digital radio signals. The Novice class is on the bottom rung of the five-level amateur licensing ladder. The two-tier examination the government requires prospective Novices to pass consists of relatively easy technical and Morse code tests. (Eight-year-olds have been known to pass the exams after only a few days of study.) Hams holding higher-class licenses have already established elaborate interstate and worldwide packet radio bulletin boards.

IMPROVED POLICY

Representative Cardiss Collins (D-Ill) has introduced the Telecommunications Policy Coordination Act of 1987 (HR 323) into the House side of Congress. The bill is an attempt to improve the communication and decision-making process among the various agencies in the Administration's Executive branch when it comes to formulating telecommunications policy.

Rep. Collins' bill would help cut through the current bureaucratic complexity, which tends to hinder new developments. If passed, the bill would call for the establishment of an Office of Telecommunications Policy. This office would be under the wing of the Executive Office of the President.

The bill gives the office a mandate to keep abreast of telecommunications policy options and new developments in the field, and advise the President accordingly. The office would also settle disputes between government agencies seeking to implement new—and all too often conflicting—telecommunications policies.

Observing the industry, the new office would study new telecommunications technologies and report on the possible effects to existing facilities, services and systems. It would then make recommendations, in the form of reports, to the White House and Congress, on whether the new technologies should be integrated at the federal level. The office would also report on the effect new telecommunications technologies would have on the national economy.

The bill is currently making its round of subcommittee hearings in the House Committee on Energy and Commerce.

DROP CARRIER

Following legislation isn't the most exciting aspect of telecommunications, but it is a vital one. The industry is being shaped by these types of decisions. The opportunity to play a part in the future of the medium is one I don't want to pass up. Do you? □

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Brock Meeks is a San Diego-based freelance writer.

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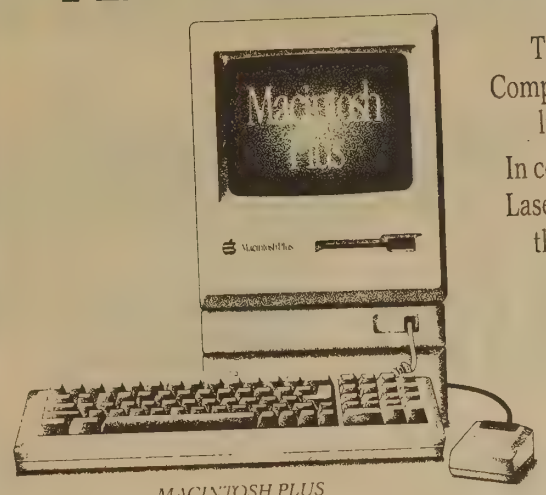

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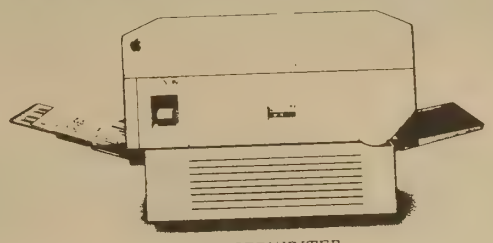

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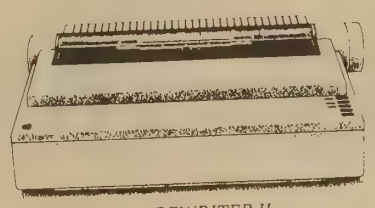

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Amiga Video, "Murder" On The C64, And More

By Matthew Leeds

The Amiga continues to heat up the desktop video market. Second generation graphics programs are moving the Amiga into the mainstream of mid-priced animation, character generation, and special effects for industrial and commercial video productions. As Hollywood begins to accept the Amiga behind the scenes, it is also increasing its placement of the Amiga *in* the scene. Look for possible appearances in upcoming episodes of *Scarecrow And Mrs. King* and *Sledgehammer*, as well as continued appearances on *Miami Vice*.

Aegis Development is moving to the forefront of this segment of the market. They have acquired the rights to two important products: *Infinite Loop* by Alan Hastings, and an unnamed character generation program. *Infinite Loop* has wowed audiences with its smooth animation, complex movements and transformations, range of shading, and ability to handle large numbers of objects. While early demos show the promise of *Infinite Loop*, insiders say that a lot of work will still be required to deliver a finished product. Although the core of the program has been finished, the critical "front end" has yet to be defined.

Very little has leaked so far on the character generator being developed by Aegis. The only significant information I've learned so far is that it will be able to make use of vector fonts, which are letters made up of line segments instead of bit maps. This critical difference opens the door to powerful transformations: rotations of individual letters, perspective scaling, shading across letter surfaces, and variable point of view. (No information on other features or release date so far.)

Aegis is planning to ship its new telecommunications program in March. Called *Diga!*, it incorporates a unique capability termed "Doubletalk" — essentially a new protocol allowing two-way transfer of files and a chat mode to operate simultaneously. You could transfer files and chat about their use at the same time.

Other significant features include Scripts, a macro-like language used to control *Diga!*. It supports branching and conditional statements, and will do log-ons and file transfers unattended at a designated time. Scripts are linked to icons, and can be run just by clicking on them. Included terminal emulations include VT100, VT52, Amiga, and Tektronix 4010. Overscan is implemented to support 132-column VT100, and additional emulations can be loaded into the system. Tektronix files can be loaded into *Draw Plus* or saved as IFF files.

Amiga program files are transferred with their icons and auto-chopped. Kermit, Xmodem and batch file transfer protocols are provided. *Diga!* will require a minimum of 512K.

Electronic Arts has released a pair of new programs for the C64: *Make Your Own Murder Party* and *Computer Scrabble*. *Computer Scrabble* includes a playing vocabulary of over 12,000 words, and a built-in wordspeller that double-checks every play. There are four levels of difficulty, and players can compete against the computer, one other player, or up to four players.

Murder Party is a computer-assisted game that doesn't require the use of the computer to play the game. Players are invited to join in an evening of dinner and amateur sleuthing. In planning the party, the host matches guests with character roles in the chosen scenario. Each role can then be personalized with the individual characteristics of each guest. The computer will then print out invitations, clue books, note sheets of suspects' movements, capsule biographies, background information, and verdict sheets for each guest. Once the material has been printed, the computer is no longer needed.

Two scenarios are included in the first volume: "The Big Kill," in which a group of friends from the '60s try to discover who among them is a killer, and "Empire," which features members of a rich and powerful family with one killer in the clan. Each time you use a scenario, the computer changes the murderer's identity. During the party, clues are revealed, and each guest (and the host) becomes a leading suspect.

The Command Line Interface (CLI to the rest of us) on the Amiga is both a blessing and a curse. Sure, it gives you access to AmigaDOS through commands in the C directory and lets you run public domain software that doesn't support Workbench (imagine that on a Mac), but a whole lot of folks bought Amigas to get away from DOS commands. The problem is, if the software you want to run from Workbench expects a certain set of conditions to be true before it will operate correctly, and those conditions are not true, you may need to use DOS commands from the CLI to correct things.

An example will suffice. I'm writing this column using Micro-Systems' *Scribble!* — one of the better word processors for the Amiga. The new version (2.0) includes a spelling checker (a necessity for me), and the ability to load files from icons. To do these things, however, it needs to know where to find both the system directory and the dictionary file. The program startup sequence sets everything up correctly if you boot with the distribution disk, but problems set in if you try to load the program from a disk other than the one you booted from. To set everything right you need to do a few ASSIGN commands.

That means opening up a CLI window, typing in the commands correctly, closing the CLI window, and then loading the program. What a pain. Why couldn't I just click on one icon to do the whole thing?

Now I can. A public domain program called *XICON* (thanks to Pete Goodeve) lets you create a batch file that executes when you click on its associated icon. The thing is so simple to use that I had *Scribble!* working from any drive (hard disk included) in just a few minutes.

It would be enough, if that were all *XICON* did, but it's not. Instead of having *XICON* execute a batch file, you can link it to any data file and operate on that data file using commands in the ToolType list. You could display a picture file, play a music file, run an animation file, or dump a text file to your printer. The list is endless, and limited only by your imagination.

XICON is shareware, and no contribution is asked. It can be found on FISH DISK #31, or check with your local Amiga public domain library (at your local Amiga user group).

Finally a little tidbit of gossip. No names in this one — I'm growing temperate in my old age. It seems that an Amiga hardware developer came up with a recoverable RAM disk program that would only work with its own products. Another Amiga hardware developer decided to publish another version and began development. About two weeks before they were about to release this version, the first developer released a new version that would work with anyone's hardware and put it in the public domain. You figure it out.

That wraps it up for this month. Next month I'll have a review of The Commodore Show, Video Expo, and any other news that fits. □

Matthew Leeds is a writer/photographer specializing in high technology. He has been involved with Commodore computers since 1983. *Copyright © 1987 by Matthew Leeds. All rights reserved.*

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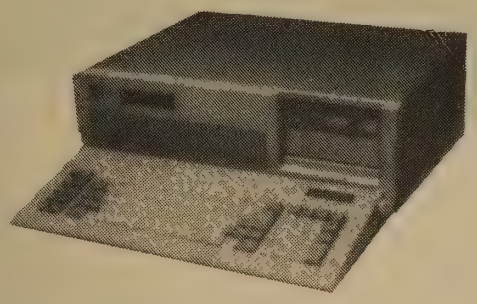

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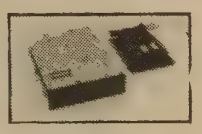

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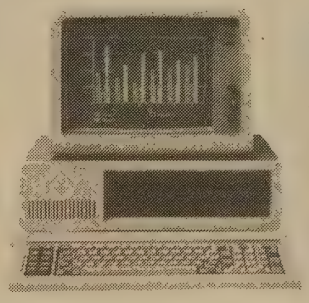

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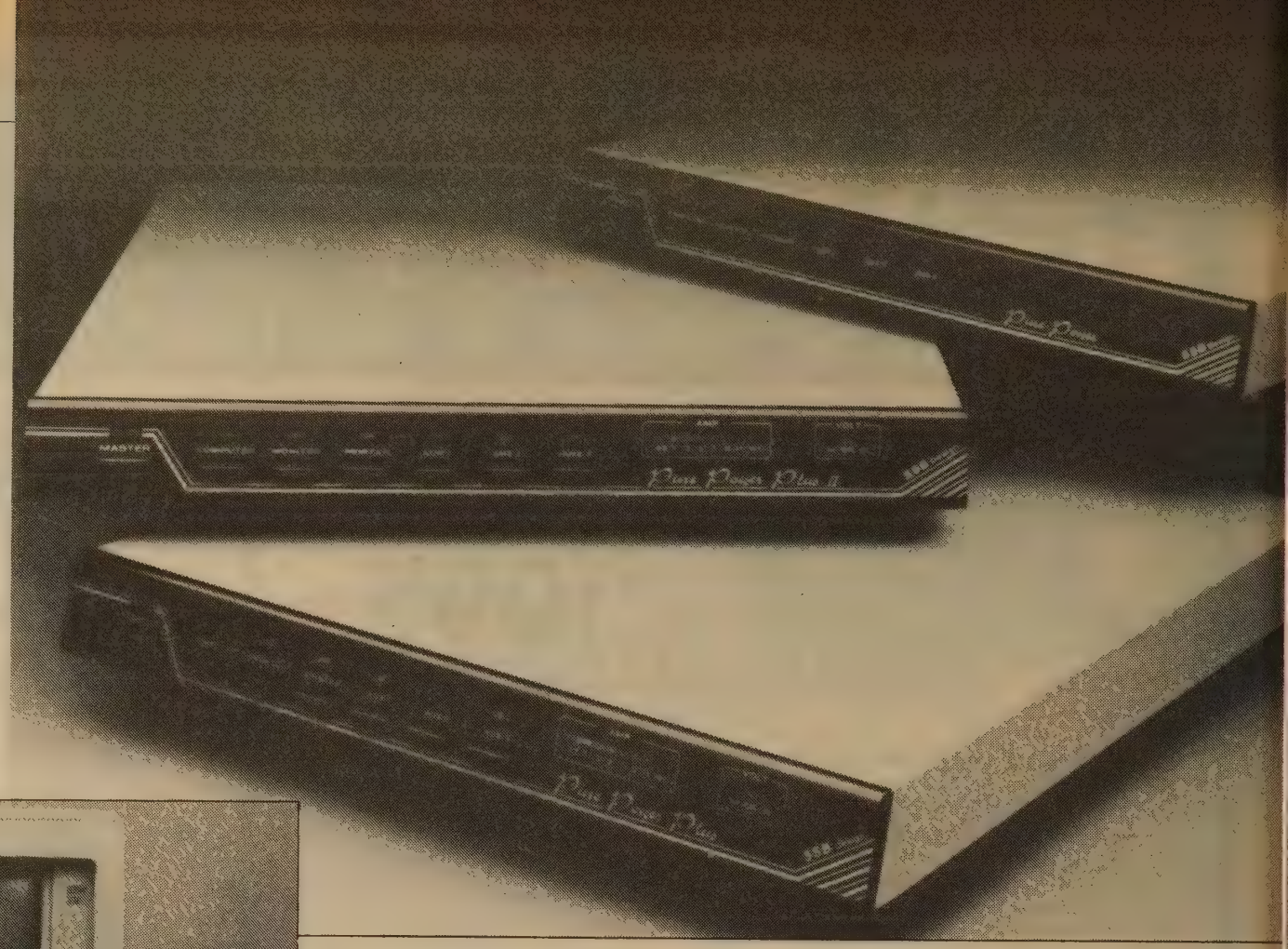
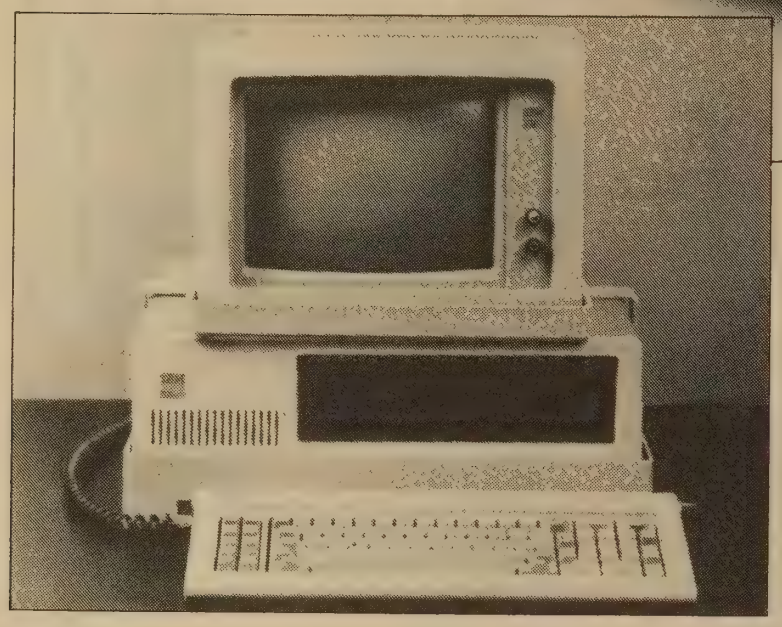
Power Surge Suppressor

PurePowerPlus, from SSB Design, is an innovative surge suppressor master switch system with a built-in voltage and current indicator. Other features include six power outlets and one control master on/off switch, swivel base, and front panel static discharge. In addition to PurePowerPlus, SSB has announced three other products: PurePower, PurePower II, and PurePowerPlus II, all available now. For the nearest dealer or to order, call (714) 261-6855.



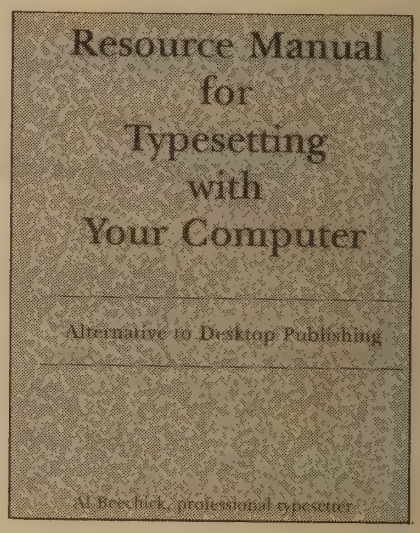


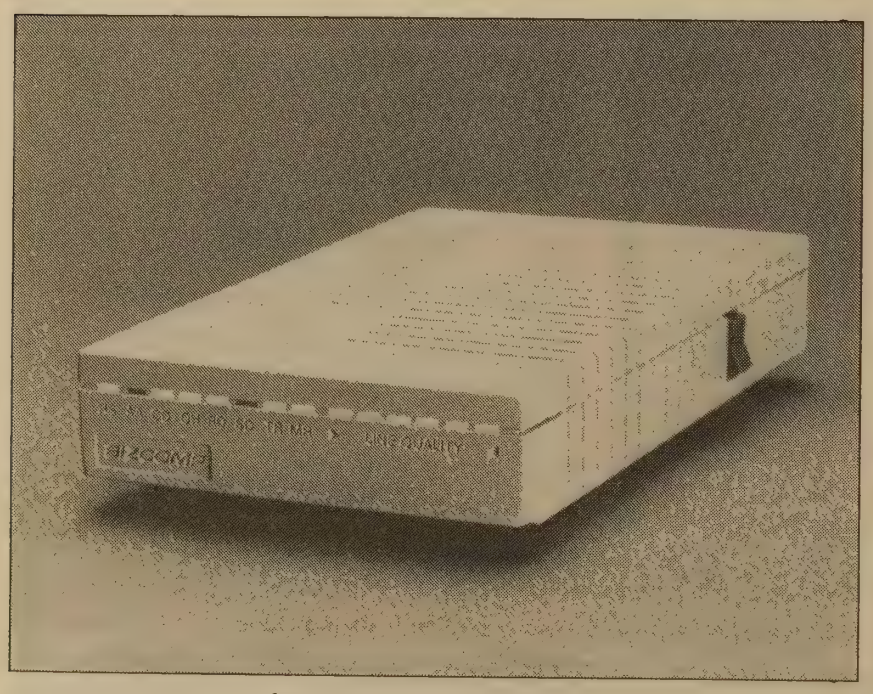
An End To The Disappearing Computer

For about $100 you can buy a lifetime of security for your valuable computer equipment. Armor Lock Corporation's DataLok offers an anti-pry fastening system for preventing theft of computers, computer peripherals and printers. Designed using the heaviest gauge steel in the industry, DataLok is effective in deterring even the most determined attack. And DataLok won't rob you of precious work space. Armor also manufactures FlexLok, a cable security system for use when it's not feasible to drill into the workstation. Contact Armor Lock Corporation, 16 Fairlawn Street, Ho-Ho-Kus, New Jersey 07423, (201) 652-9199.

Do-It-Yourself Typesetting

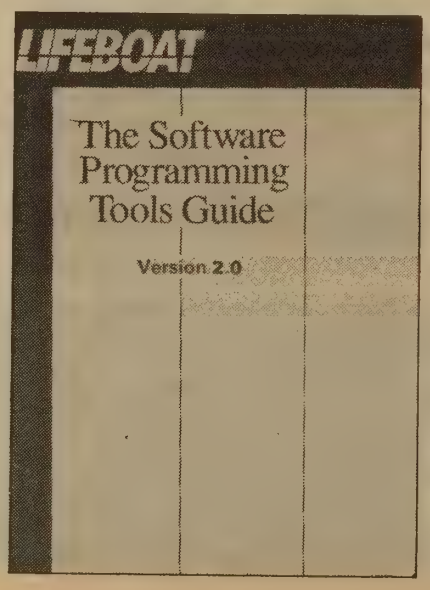
Resource Manual For Typesetting With Your Computer defines a simple method for typesetting with your computer. Written by professional typesetter Al Beechick, this handy manual gives step-by-step instructions for transforming your computer into a typesetting terminal without investing in expensive equipment. With *Resource Manual*, there is no software to buy, no interface to purchase. The cost is $15 from Arrow Connection, PO Box 899-MT, Pollock Pines, CA 95726.





Bizcomp Boasts Bus

From Bizcomp Corporation, out of Sunnyvale, come the IntelliModem 2400 PC (external) and IntelliModem 2400 PC (internal) 2400 bps modems, each with the new "bus" feature. This internal bus allows standardized connections for all expansion options or production modifications. Each modem is now available for $599. For further information, contact Bizcomp Corporation, 532 Mercury Drive, Sunnyvale, CA 94086, (408) 733-7800.



Programming Tools Update

An updated version of the *Software Programming Tools Guide* has been issued by Lifeboat Associates. More than 20 pages of new product information have been added. The guide, which details over 130 software development programs, is intended for serious programmers who need assistance in determining the software most appropriate to their needs. It is available free to Lifeboat's Key Account and Key Dealer customers and registered users of Lifeboat's published products or for $10 to other programmers. Write to Lifeboat, 55 South Broadway, Tarrytown, NY 10591.

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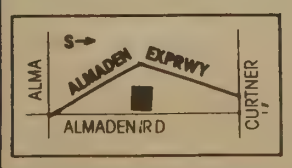

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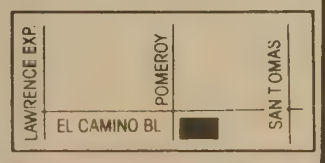
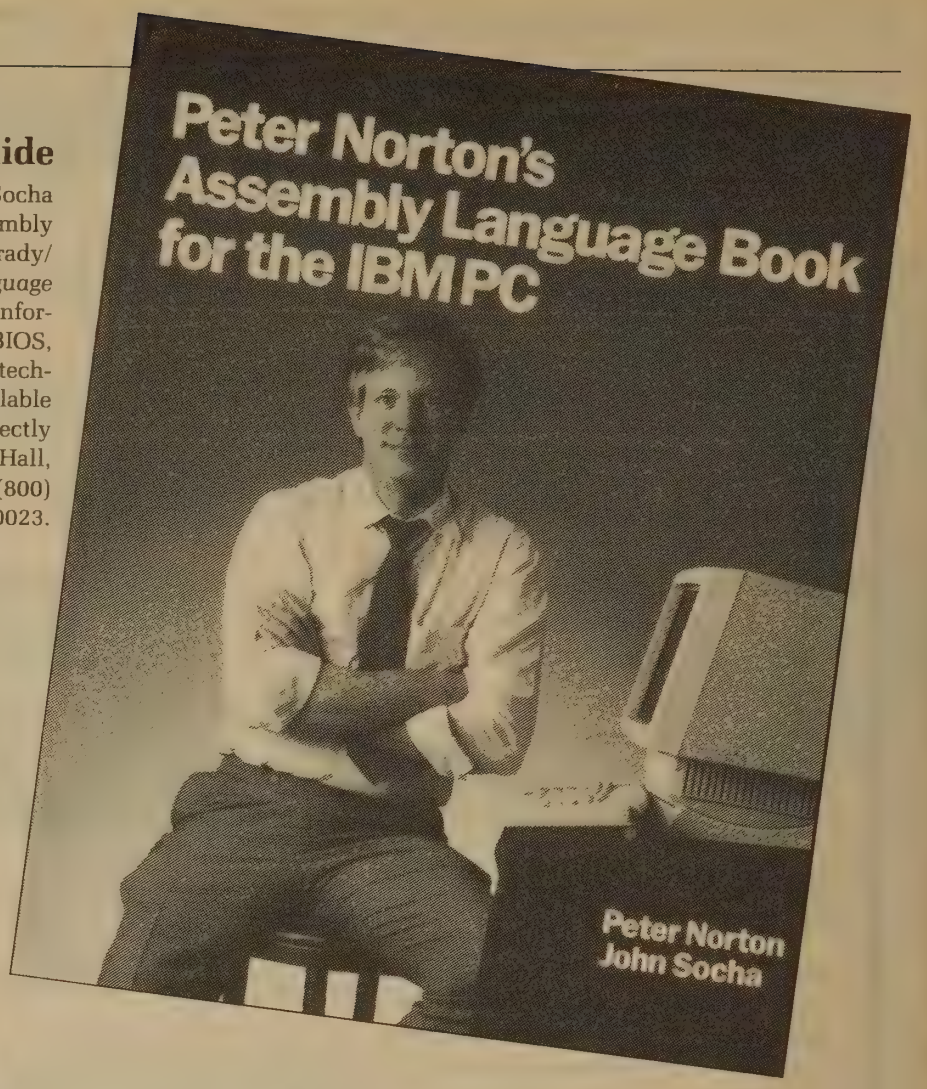
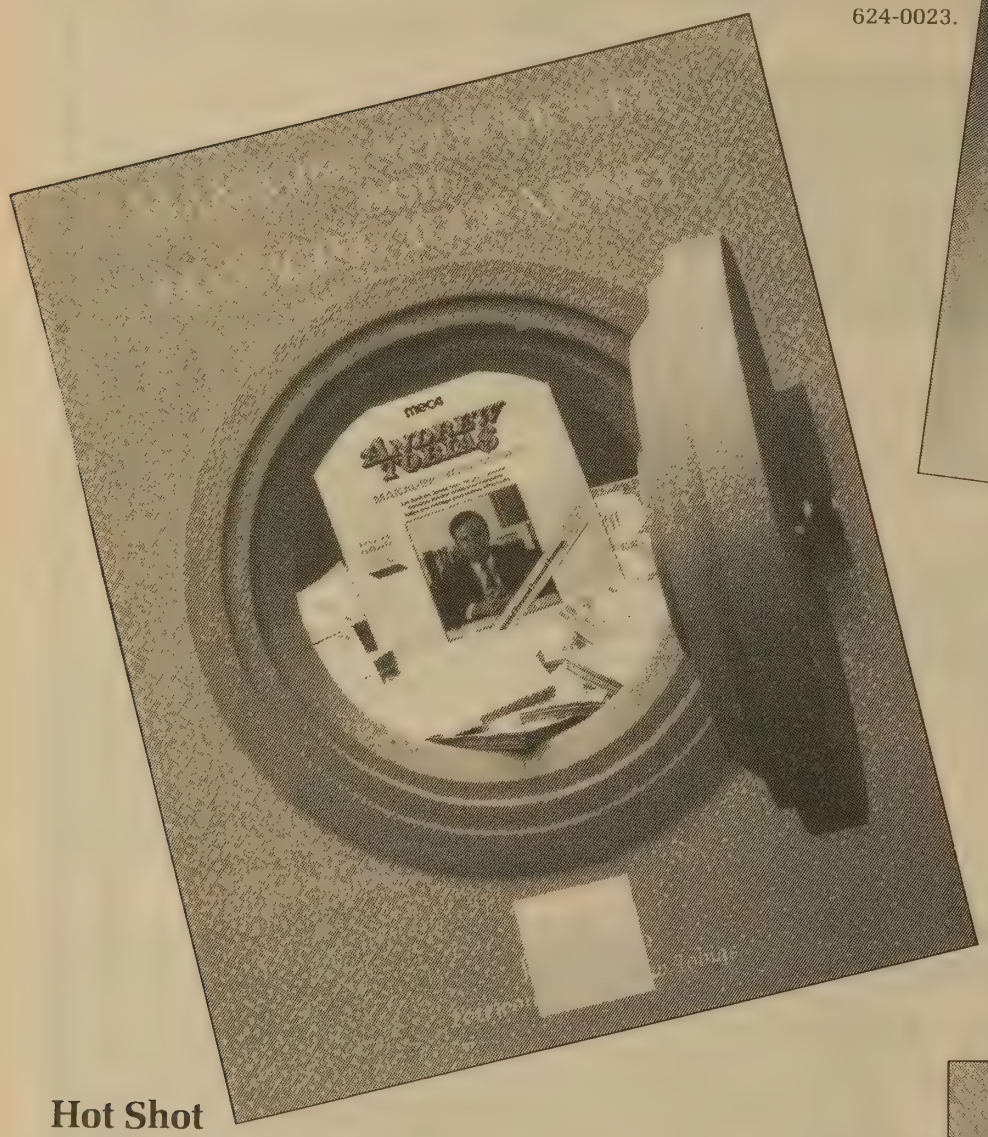


Norton's Assembly Language Guide

Noted IBM authority Peter Norton and co-writer John Socha have completed a comprehensive guide to assembly language. Available in a handsome softcover from Brady/ Prentice Hall Press, *Peter Norton's Assembly Language Book For The IBM PC* is selling for $19.95. It includes information on segments, modular design and the ROM BIOS, procedures for writing large programs, and debugging techniques. There is an optional companion diskette available for an additional $24.95. Both may be obtained directly from Brady Communications Company c/o Prentice Hall, PO Box 512, Nyack, NY 10994 or call toll-free (800) 624-0023.



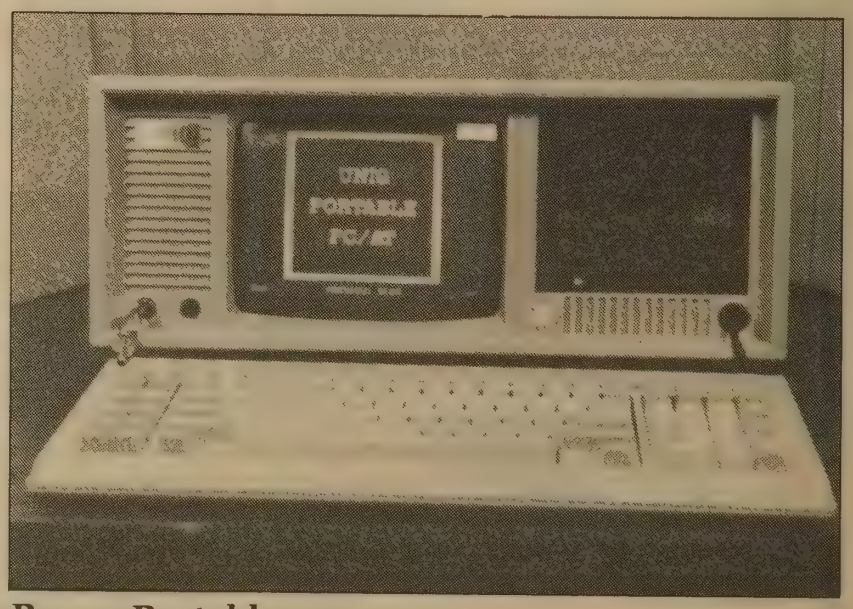


Money Matters

Here's a book to help you get the most out of Andrew Tobias' best-selling software program *Managing Your Money*. Written for the IBM PC with special instructions for the Apple II, Jim Bartimo's *Managing Your Money With Managing Your Money* consists of guaranteed strategies for figuring your budget and monthly bills, evaluating your insurance needs, understanding the new tax laws, planning for retirement, and more. It's available now at most bookstores for $16.95. Microsoft Corporation, 16011 NE 36th, Box 87017, Redmond, WA 98073-9717.

Hot Shot

HOT SHOT Graphics Printer Interface for Commodore computers is now available from Omnitronix, Inc. It features an empty socket to plug in an 8K RAM chip to help speed text and graphics printing as well as a DIP switch for selecting printer type, linefeeds, device number, and settings for default operation in Transparent, Emulation, ASCII and Enhance Features mode. For more details on HOT SHOT, contact Omnitronix, Inc., 760 Harrison St., Seattle, WA 98109, (206) 624-4985.



Peppy Portable

UNIQ Technologies has released a speedy new portable computer called the UNIQ Portable PC AT 286. Among its features are an 80286 CPU 10 MHz/ 6MHz hardware/ keyboard switchable motherboard with zero wait state at both speeds. Included are a 1.2 MB floppy disk drive, a hard drive and floppy drive controller, power supply, AT type keyboard, and a dual frequency monitor. It retails for $1695. Need more information? Call UNIQ at (408) 736-7440.

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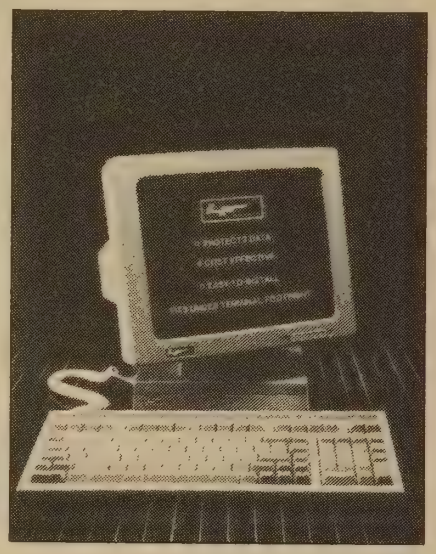
How To Win The Tax Game

Changes in the tax laws got you confused? Check out *Winners & Losers: The Tax Planner*, a software package for the IBM PC with a minimum of 256K RAM. It allows the user to create countless "what-if" scenarios to determine the effects of major expenditures or changes in financial status on the user's taxes. Users can create and store an unlimited number of files. *Winners & Losers* is priced at a low $39.95 and can be purchased through Sertan Sense, Inc., 3145 Geary Blvd., Suite 407, San Francisco, CA 94118.

VDT Power Supply

Protecting multi-user systems against the dire problems caused by power interruptions has always been a problem. Now LF Technologies of Carson City has a solution—the VDT Guardian Terminal Pak, an online, uninterruptible power supply specifically designed for micro, mini and mainframe video display terminals. The VDT Guardian is a compact unit that sits directly under the monitor and is easily installed. It sells for $149, making it affordable to protect all the terminals on a system. For information, call LF Technologies at (702) 883-7611.

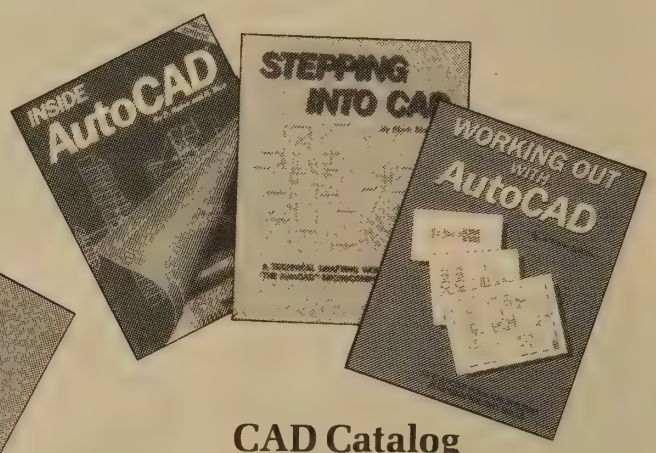


Affordable 386

PC Discount of Houston offers its own 80386-based PC, the Noble 386, priced at $3999. The unit features a 40 MB hard disk drive, a 1.2 MB floppy disk drive, and a 101-key keyboard. It includes a slot for an 80387 math coprocessor plus eight expansion slots and a standard 1 MB of RAM, expandable to four gigabytes. For information call PC Discount at (713) 864-0295 for information.

From The Outback

There's the Great Barrier Reef, Crocodile Dundee and *The Thorn Birds*. Now Australia can add to its list of credits *Tracker*. Best described as an "intelligent rolodex," this simple disk makes a great sales tool for accessing client files. To order, call (714) 852-1467. Distributed by Adaptive, 3701 Birch St., Newport Beach, CA 92660.

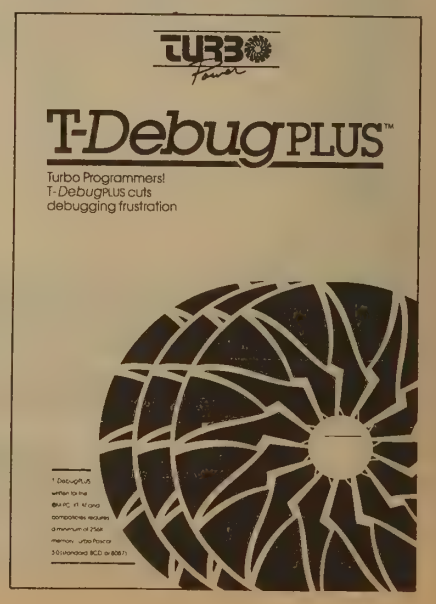


CAD Catalog

New Riders Publishing have the CAD industry covered with their three latest book selections. *Inside AutoCAD*, by D. Raker and H. Rice, and its companion workbook *Working Out With AutoCAD*, by Martha Lubow, provide all the information necessary for effectively using *AutoCAD*. Together they provide basic design technique and strategy for developing maximum productivity. *Inside* sells for $34.95, *Working Out* is $29.95 and both are chock-full of useful illustrations. New Riders is also offering a CAD curriculum workbook called *Stepping Into CAD*. Author Mark Merickel gives practical hands-on training including structured drafting exercises and drawing menu sequences. It is available for $24.95. New Riders Publishing, PO Box 4846, Thousand Oaks, CA 91360.

TDebug Plus

Announcing a new run time symbolic debugger for Turbo Pascal. From TurboPower Software comes *TDebugPlus* which gives Turbo Pascal programmers the ability to trace, set breakpoints and examine and set variables at run time, using the symbolic variable names from their Pascal source code. Added pluses include a special MAP file generation mode, a reference card and 80 page manual. Turbo Pascal 3.0 and an IBM compatible with 256K are required. The price is $60. To order, call (800) 538-8157 ext. 830. In California, call (800) 672-3470 ext. 830.



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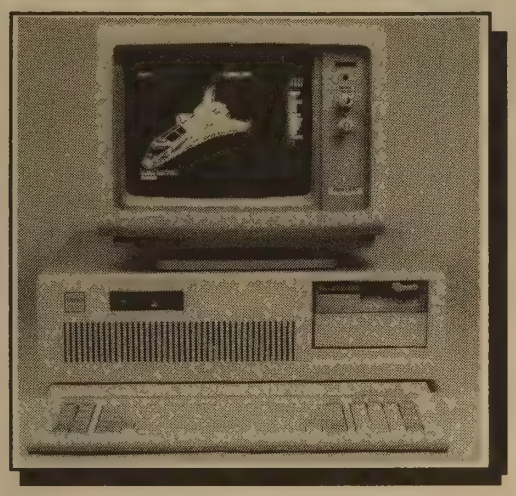

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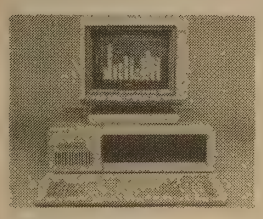
Information Based on BYTE Magazine, January 1987



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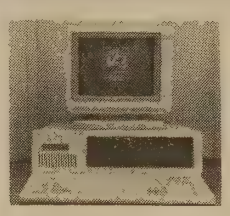

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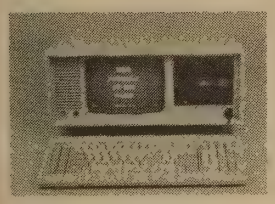

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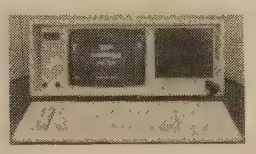

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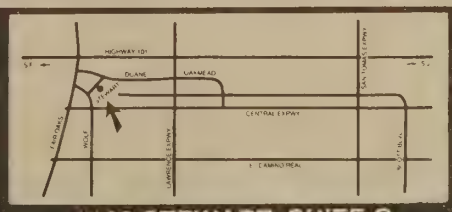

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The Penultimate XT Clone

By Ari Davidow

I have a father. He lives in Israel. Until recently, he ran a chemical consulting company off of a souped-up Timex/Sinclair (the ones that were going for $25 for awhile several years ago) and any mainframe time he could finagle. A real macho kind of guy, the sort of person who writes an operating system for seven dissimilar computers before breakfast, invents a new way of manufacturing DDT for lunch, and then goes out and watches the sunset over the desert. We don't agree on many things.

On the other hand, I am his son, and he has this consulting business, and the Timex can't do everything, and would I help him select a new computer?

Now look, this was no simple task. First off, the computer had to be good. Dad the computer whiz was going to use it. Personally, I like to write on my computer. I even write programs on my computer when a customer has expressed sufficient desperation ("I'm coming over with a 45 if you don't have that program written and working and in my office tomorrow by noon"). But computers confuse me. I took an assembly language class once and found logic confusing. ANDs, NORs, MAYBEs . . . I took a six-week summer course in Pascal once. Over a year later as a professional programmer and I still don't understand pointers. (I don't even *care* about pointers, but that's another subject.)

So computer klutz, who happens to live near Silicon Valley, is going to select a computer for dear old Dad. You bet.

The first part was easy. My friend Dave builds and markets clones in a small way. We sat down and added up the parts that go in a normal, heavy duty computer. We needed a case, a mother board, a couple of floppy disk drives, a hard disk, a clock/calendar, ports of all sorts, a monitor, even a power supply.

First, we argued about the mother board. Dave had one that mimicked the PC, had the same performance exactly. Then there was the V-20 mother board that ran faster. Then there was the turbo board, which seemed a bit flaky, but there was a new one coming out in a couple of months which would be dynamite. I bought the V-20 board. We had a similar argument over hard disk controllers. We chose one that had been working for awhile and ignored the new flashy ones.

Putting the parts together was actually pretty simple. Despite my computer klutziness, I have spent a lot of time with computers, and had a pretty good idea of where things belonged. I took my computer apart, and put things in just the way they were on mine. When I discovered half an hour later that none of the screws I had actually fit the hard drive, I kept my cool. I called Dave, and got them the next day. When the Hercules Color board didn't fit in the slots, I just bent the metal flanges until it *did* fit. Who cares about metal flanges anyway?

The truth of the matter is that if you keep your cool, and have something to copy, putting a computer together is a lot easier than, say, replacing the hub bearings on a bicycle (and a lot less messy). In fact, there are only two relatively tricky parts. First, the motherboard has to be carefully mounted on little metal posts. While doing this, little paper insulators (they look a lot like hole reinforcers that you use with notebook paper) have to go between the posts and the board. If you don't have the right posts (usually all of them) insulated, strange things will happen when you turn on your computer as the electric current flowing through your motherboard also flows up and down in unintended ways through the posts. Sometimes the holes in the motherboard and the holes in the case don't line up. Dave, however, is an old pro, and the parts he got me fit just fine.

The other hassle is the mess of cables that fit behind the disk drives. This isn't a serious problem, but it is difficult to be neat with a mess of cables for which there is no room, and which don't want to nest together even when the room is found.

I was also lucky in that the one coherent piece of documentation that came with any of the computer parts described how to set switches on the motherboard. Computers can't figure out *anything* unless you tell them the answer first. Some people are like that, too.

On the bad side, there was no coherent documentation for anything else. On the other hand, Dad is a computer whiz, and should be able to fix anything that breaks, anyway. I hope. I sent him the Taiwanese attempts at English and hoped for the best.

Formatting the hard disk was a special challenge. My hard disk was not listed in the documentation. For two weeks I waited for someone to remember how they did it last time. Finally, I sat down one evening and played. I'd format the disk one way while I was working on something else, check the results, and try the next method. It was kind of pleasant to realize that over the past year I had become familiar enough with DEBUG and all sorts of things that when I actually faced a problem, the little knowledge I had sufficed. I was beginning to feel pretty good about this project.

Now I began to load the software. I bought new copies of the Borland library, from *Sidekick* to *Turbo Tutor*. I bought a new copy of DOS. Picked up a copy of *WordStar*. Started making lists. Every time I bought him something new, I would go out and Xerox the manual just in case the original didn't make it to Israel. I kept the Xeroxes—you have no idea how much easier it is to Xerox 8½" × 11" sheets of paper than an actual manual. Picked up *Word Perfect*, *Lotus*, *dBase*. A couple more database spreadsheet programs just in case. I mean, who knows what is popular in Israel? I also had the great joy of installing everything on the hard disk and making sure that it worked. Try to figure out if you have installed *Lotus 1-2-3* someday if you don't even know what a spreadsheet program is supposed to do if installed correctly.

I shipped the manuals and triplicate copies of the disks to Israel. You have no idea how much it costs to send packages to Israel. I was spending $100 a week on Xeroxing, and another $100 a week in postage. This didn't even include the price of the software. And everything sent had to be documented: "Dear Dad, this is a program that is alleged to do . . . I never do such things, but just in case . . ."

Night after night I would load unfamiliar software, much of which conflicted (not many people realize, for instance, that if you load *ProSci*, a scientific calculator, into memory, it will mess up the cursor pad movements when using *DISMOD*, a shareware DEBUGging utility). I also discovered that much of what I bought was useless. *Windows*, for instance, is utterly useless on a PC. Its error trapping is terrible, and it is slow, slow, slow. *Homebase*, a memory resident utility that out-*Sidekicks Sidekick*, took up so much memory that I couldn't use *Reflex*, the Borland File Manager.

And despite my best efforts, much software would not install the way I wanted it to install. *The Reference Set*, for instance, would not go in the Dictionary Subdirectory I set up under the *WordStar* Subdirectory. It wanted its own subdirectory off of the root directory. *Reflex* was similarly intractable (although once installed, *Reflex* agreed to be moved to a sub-subdirectory under DATABASES. That's more than I can say for some programs).

In the end, Dad ended up with a full hard disk — 20 megabytes of programs. There were two word processors, two program editors, three data base programs, two spreadsheets, about five communications programs (none of which I liked), utilities all over the place, debuggers, DOS shells, menus, BASIC, C, Prolog, Pascal, Assembler, dictionaries, fancy font formatters, engineering tools . . . I have copies of manuals for software whose purpose is still not clear to me, but it *might* be useful in Israel.

The export license took another two months. What was going to be a one month project became a six month obsession. In the end, I stayed up all night, put the whole thing in boxes, and shipped it out. It arrived. It worked. It took all of my new car money, but the damn thing worked.

So, here I am kicking back, patting myself on the back, when the letters start arriving. "You know, this thing doesn't print in Hebrew . . ." □

Ari Davidow is a typographic consultant specializing in interfacing computers with typesetting systems, and transferring words between different word processors and typesetting systems. He needs a new car.

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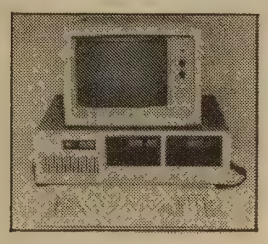

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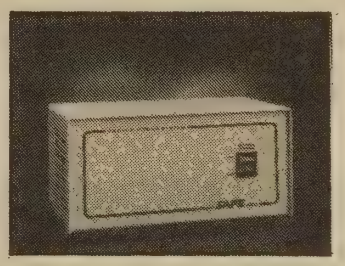

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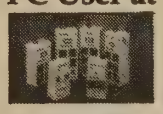

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Price: *$89.95*
Reviewed by: *Jim Switzer*

Are you a small businessperson who just can't seem to keep track of your sales or marketing reps? Does your secretary schedule meetings that conflict with other appointments? Do you want to do something about these problems, but not want to spend a lot of money for fancy, name-brand computer software? *SUM:TIME—A Timely Organizer* can help.

SUM:TIME is an integrated time management program that can do more than just manage your time. The program features four major functions: Time Manager, Letter Writer, FileDex, and Terminal. The Time Manager gives you the ability to keep track of up to 32 individual calendars, as well as integrate them into a master calendar. You can schedule appointments and meetings, keep track of total hours booked, etc. The calendars let you keep tabs on the Whos, Wheres, and Whys of time management.

The Letter Writer is a word processing program that can double as an electric typewriter, if you so desire. Features include word wrap, mail merge capability, and cut and paste. The FileDex function is similar to an electronic Rolodex, with the capabilities of a small database management system. The FileDex allows you to define up to eight data fields for whatever you wish. It also has five pre-defined fields for mailings. This function will allow you to capture data and merge it into a document created with the Letter Writer for individualized form letters.

The program also features an auto-dial function to allow you to phone a person within the database using your Hayes-compatible modem. The Terminal function gives you the ability to communicate with other computers or time-sharing services as a VT100 terminal. You can modify baud rate, COM ports, parity, etc., for complete communications control. The program also gives you the ability to resize and move any of the four function "windows." The program also offers support for either the Microsoft or Mouse Systems Mouse, for easier maneuverability through the program.

SUM:TIME offers very helpful, practical features. While in the Time Manager, you can set up individual calendars for your employees so you can keep track of their appointments as they relate to your overall business. The master calendar will display the number of morning and afternoon appointments in the right-hand side of a given date on the calendar. You can create an entry for a meeting, which will, in turn, block that time on the calendars of those who need to attend the meeting. You can quickly get an idea of the total number of hours booked for a given week or month by just pressing two keys.

No need to worry about overlapping appointments—*SUM:TIME* will display and allow you to adjust them quickly and easily. The Letter Writer function gives you the added ability to create letters, memos, and documents just as easily as you type. The function also gives you the ability to type-through directly to your printer by character or by line, whichever you prefer.

The FileDex portion works fairly well. You can create different database files to meet your needs—maybe one for clients, another for suppliers, and so on. Each can have up to eight data fields which you assign, so they don't all have to be the same. The Terminal function operates as an ASCII serial terminal. You can communicate with other microcomputers as well as on-line services such as GEnie.

SUM:TIME is very easy to use. The program makes extensive use of the IBM's function keys, so you don't have to remember any complex command sequences. The commands associated with the function keys are displayed on the top of the screen. Just press the function key and a pull-down menu appears with the available selections. Move the highlight bar to the command/selection you want and press RETURN. It can't get much easier than this. The program has a "suspend" feature which allows you to temporarily exit from one function and begin another. This is executed by pressing the F7 key. The program will notify you that it is updating the suspended file and then ask you to press the function key that relates to the next function you wish to execute. This allows you to "hop" between two or more of *SUM:TIME*'s four functions easily and quickly—almost like having four memory-resident programs.

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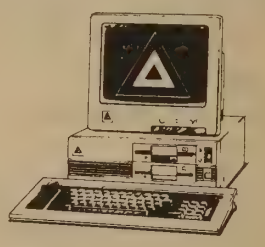

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SUM:TIME's error handling is only fair. Like a lot of other "smaller" companies, Sumware neglected to trap for a printer on/off condition. In the case of *SUM:TIME*, DOS intercepts the error—not a big problem in itself, but annoying. I encountered another error during the setting up of a FileDex file. The program discovered an error that I had made about halfway through the creation of the file and told me so. However, when I responded to the prompt the program immediately returned me to the beginning of the FileDex function, losing all of my data!

SUM:TIME requires no special installation procedure. Just copy the files to your hard disk or make backup copies to suit your needs. For your convenience, the program is not copy-protected.

SUM:TIME is just about the only package that a small-to-medium sized company would need for day-to-day scheduling and making business contacts. The only other software package that you might need is a spreadsheet. At $89.95, you can't beat the value. And for you with larger businesses, Sumware offers a LAN-based *SUM:TIME* starting at $189.95! (Sumware, Inc., 23121 Verdugo Drive, Suite #101, Laguna Hills, CA 92653-1339, 714/855-3062.)

WORD PROCESSORS

Multiscribe Version 1.10

Published by: *StyleWare*
For: *Apple IIe, IIc*
Price: *$59.95*
Reviewed by: *Conrad D. Cox*

Ever wish you could trade your Apple IIe or IIc for a new Macintosh? Do you crave the ability to change the look of your documents from dull, 12 pitch Pica to something more exotic, more flamboyant?

MultiScribe allows you to produce documents printed with the distinctive flair of enhanced fonts and styles. Additional fonts of the user's own design can be employed. Moreover, *MultiScribe* offers the look and feel of the Macintosh, without the expense of upgrading your present IIe or IIc.

MultiScribe operates with or without a mouse. To those who are familiar with the Macintosh, *MultiScribe* with the mouse will feel like an old friend. Pull-down menus from the menu bar, dialog boxes, and the scroll bar on the right side of the display screen add to the illusion.

For those who would rather go mouseless, *MultiScribe* uses the arrow keys, the OPEN-APPLE and SOLID-APPLE keys in conjunction with alphanumerics to move the cursor within the document and directly access the many functions of the program. *MultiScribe* also allows the user to pull down and make selections from the menu bar using keystrokes in lieu of a mouse.

MultiScribe has most of the word processing features you would expect from a word processor in this price range. It performs cut and paste operations on a word, part of a line, or whole paragraphs. A "clipboard" disk file is used to hold the cut. On the minus side, this disk access slows down the procedure. On the plus side, you can put frequently needed text on the clipboard and insert it as needed anywhere in the text.

Other word processing features include a search and replace function, "what you see is what you get" display, centering, left and right justification, and the choice of forced or automatic page breaks. *MultiScribe* can paginate documents automatically. For longer documents, files can be chained together to print as if they were one continuous document.

The ability to display and print text in a variety of fonts and type styles makes *MultiScribe* more than just a text editor. The ten fonts included in the program are named after various writers: Hemingway, Milton, Dante, and Mark Twain, to name a few. The fonts range in appearance from Elizabethan script to space age lettering. There is even a font named Michelangelo, comprised completely of pictures.

MultiScribe's fonts may be further altered by the user. Text can be underlined, printed and displayed in bold, shadow and outline styles. Text can also be italicized and printed in superscript or subscript. Even the size of the text can be enlarged in 50% increments up to three times normal size. Each font is shown in the monitor screen exactly as it will appear on the printed page.

MultiScribe contains a font editor program that allows the user to make modifications to the existing fonts to suit individual requirements. New fonts can even be designed from scratch.

MultiScribe is packaged on two sides of a single 5¼" diskette. Because the program is not copy protected, it may be backed up to a 5¼" or 3.5" disk or installed on a hard disk without difficulty. The program also recognizes and can be installed on extended memory cards. The user's guide provides a BASIC program to automatically load the program and fonts into Apple, Applied Engineering and Checkmate Technology extended memory cards. *MultiScribe* operates under the ProDOS operating system, offering full pathname support.

As I booted *MultiScribe* I was surprised to see my green IIc monitor take on the distinctive appearance of the Macintosh. Instinctively I reached for the mouse and began to drag, click and pull down everything in sight. I am not very

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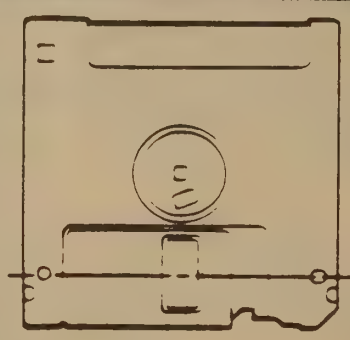

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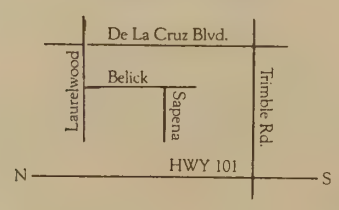

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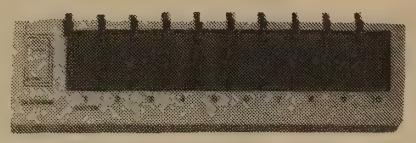

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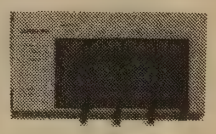

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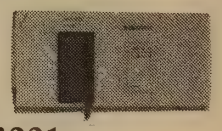

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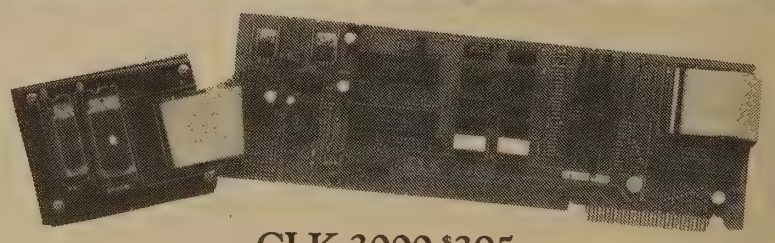

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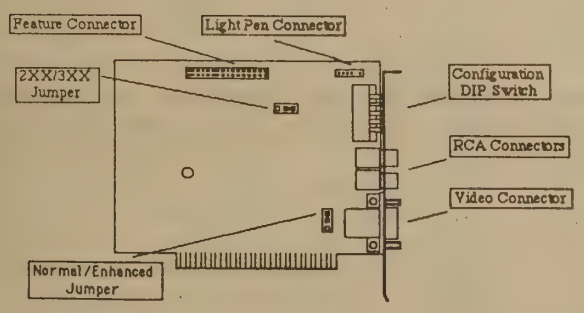

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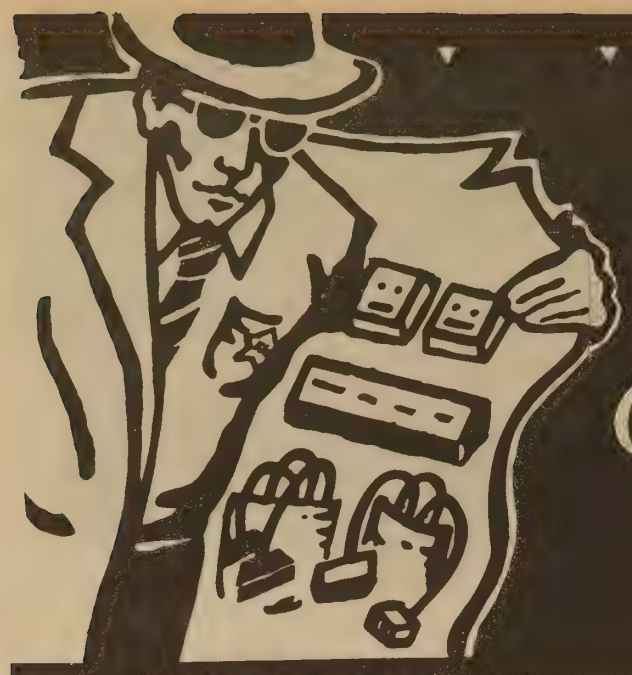

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proficient on the Mac, but I became comfortable with the interface at once.

The second thing I noticed about *MultiScribe* was the number of disk accesses necessary to do everything. Unless the program is installed on a hard disk or RAM card, editing will be a bit slow. Even moving text requires writing the text to disk.

The single disk user will require an extra measure of patience, as the *MultiScribe* program disk must remain in a drive at all times. (Again, a RAM card can be a real time saver.) If you are in the habit of saving your work at regular intervals, be ready for some disk swapping.

Because of these shortcomings, and because the program does not support headers, footers, footnotes, or glossaries, *MultiScribe* can't be called a full-feature word processor. That doesn't mean it isn't a useful tool. For documents where page layout isn't critical (letters, informal correspondence), *MultiScribe* can create documents fairly well. Longer documents created on ASCII word processors can be loaded into *MultiScribe* and "dressed up." Files as long as 29K may be loaded into the program.

MultiScribe is very easy to learn and operate. Users already familiar with the operation of a mouse will have no trouble operating the program. Even without a mouse, *MultiScribe's* menu bar provides menu-driven convenience for the new user. As proficiency increases, the user may decide to use the OPEN- and SOLID-APPLE command sequences to quickly evoke program commands.

The *MultiScribe* user's guide is well thought out, divided into two major sections—the *MultiScribe* area and the font editor area. Separate reference sections are provided for each area. The guide also contains tutorials which guide the user through enough exercises to get a beginning sense of the program. It is well indexed and contains an extensive table of contents.

The manual doesn't assume that *MultiScribe* will be used with a mouse. Instead, it provides instructions for both interfaces at the same time. While I found this aspect of the user's guide a bit cluttered at first, I quickly became used to it and was able to pick out the instructions I required while skipping the parts that didn't interest me.

The program requires an Apple IIc or IIe with an extended 80 column card. More than a dozen printers—Epson, Star Micronics, Okidata, to name a few—and more than 40 printer interfaces are supported. As this review was being prepared, StyleWare announced the introduction of version 1.11, increasing the program's hardware compatibility even further.

StyleWare offers a non toll free phone number during normal business hours for technical support. The user's guide clearly states that no warranty is made as to the "quality, performance, merchantability, or fitness for any particular purpose" of the software. Quite a strong position of disassociation! However, the questions I had about the software were answered politely and quickly when I called the support phone number. Nonetheless, I would be sure your program disk is backed up, just in case. (StyleWare, Inc., 6405 Hillcroft, Suite 201, Houston, TX 77081, 713/668-0759, $59.95.

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Lotus™ 1-2-3™

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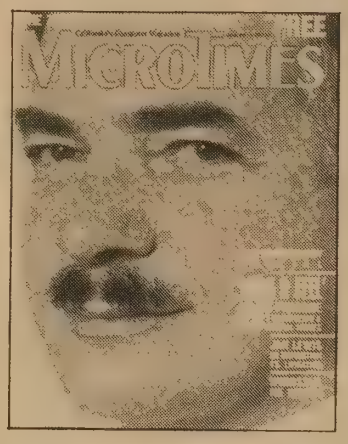

In The June Issue Of MicroTimes

CIRCULATION/DISTRIBUTION

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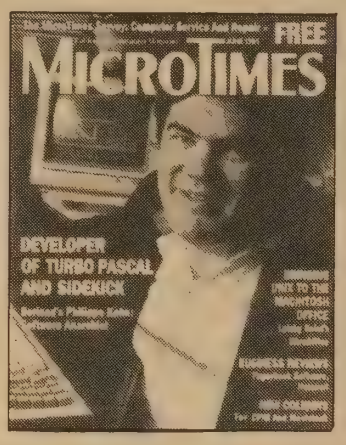


EDITORIAL CONTENT

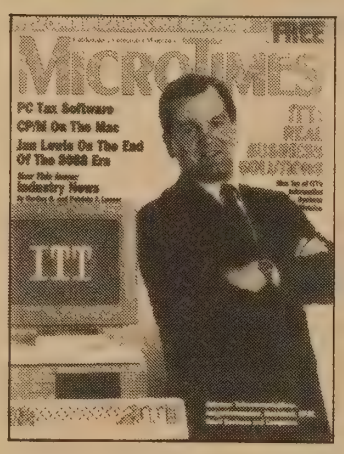
The June issue of MicroTimes will feature major editorial on Lotus Development's spreadsheet 1-2-3™ and its line of business software.

This targeted editorial will also focus on the role of third party developers who offer user enhancements, vertical market applications, and support services for the rapidly growing 1-2-3™ after market.

And we'll bring you an up to the minute report on Lotus' litigation concerning copyright infringement in the "Look and Feel" Debate.

ADVERTISING DEADLINE

April 15th, 1987



ON STREET

May, 1987

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documents. While it's designed as an educational package for junior high, high school and college-level students, it's not just for the kids.

The program features an easy-to-use graphic menu system. It includes a "what you see is what you get" word processor with on-screen bolding, underlining, and italics. The word processor supports and displays the character sets of such foreign languages as German, Spanish, Greek, French, and Italian. The *A-Plus* word processor also lets you import/export ASCII files from other word processors, so you don't have to re-key old work.

The *A-Plus* drawing program features four-color drawing, creation of boxes, circles, triangles, and other geometric shapes. These drawings may be saved and included into your word processing files for a graphically oriented document.

A-Plus also provides a set of easy-to-use utilities to create, move, copy, and erase files and/or disks. The program supports 18 printers ranging from dot-matrix to ink jet, and can produce near-letter-quality documents on printers that support this output.

A-Plus is copy-protected, but the package includes instructions for installing the program, and the procedure works well. Using this procedure, you can place the *A-Plus* package on a floppy or hard disk-based system for backups and execution. Start the installation by placing the distribution diskette into Drive A, typing INSTALL and pressing RETURN. The installation program will then ask you whether this is your first installation. If so, you then select "where" you wish *A-Plus* to be located. The program then copies the files to the applicable location. You are then given the ability to "set up" your printer, work drive, graphic display type, and color of the screen. If you have already installed *A-Plus*, you may modify your "setup" by using this same installation procedure and responding "NO" to the first-time question.

A-Plus performs very well, letting you move from word processing to drawing to utilities with tremendous ease. The word processor sports menus at the bottom of the screen at a touch of a key. These menus let you choose language sets, include drawings, change the typeface you are presently working with, and perform many other functions that help you create your document.

The drawing portion works similarly to ZSoft's *PC Paintbrush*. You can draw circles, boxes, rectangles, and other objects by choosing from the "palette" of tools on the left-hand side of the screen. Once you have finished your drawing, save it to disk for later use with the A-Draw portion of *A-Plus* or include it in one of your A-Write documents.

The *A-Plus* utility performs just as well. It allows you to copy, delete, or move files from one location to another. The utility section also lets you import/export ASCII text files from other word processors. The only problem with the performance of the package is the printer interface. At review time, the program only supported 18 printers, most of which have some quirks that won't allow you to print certain things (such as superscript/subscript, foreign language characters, etc.). I happen to have a printer that didn't seem to want to print graphics, as well as certain characters. When I called in about this problem, Savant's support proved outstanding.

A-Plus is very easy to use. The program features a graphically oriented menu; first, choose whether you want to work in A-Write or A-Draw. This is done by choosing the proper icon and pressing RETURN. *A-Plus* organizes material in "Binders," much as a student would with class work. These binders are shown on the right-hand side of the screen with their bindings facing outward, with the appropriate title on each. To select a binder, you move the reverse-video highlight to the binder you want and press RETURN. A hand will appear

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If you plan to attend the 12th West Coast Computer Faire at Moscone Center in San Francisco, March 26-29, we cordially invite you to stop by our booth **Number 1213** and meet Aubrey Pilgrim, the author of the RLL article.

Mr. Pilgrim is also the author of "Build Your Own IBM Compatible and Save a Bundle." Copies of his book will be available in our booth. Mr. Pilgrim will also demonstrate the assembly of an 80386 computer. This free seminar will be presented at the Faire on Friday, March 27, 11:00-1:00 in room 236-238. You are cordially invited to attend.

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What's Happening?

Check the MicroTimes Calendar of Events in this issue for computer-related classes, seminars, and shows in your area.

on the screen and pull the binder aside. The contents of the binder will then be displayed in the middle of the screen as "file folders" within the binder. As before, to select a file folder, move the highlight to your choice and press RETURN. A paper clip will signify that the file is currently selected for working. At this point, you may either modify the document/drawing or print it by choosing the proper icon. If you choose to work with A-Write, once you've entered the document mode you can access help menus by pressing the ESC key. You may choose your command from these menus or by pressing the CTRL key and the appropriate letter for the command.

The A-Draw portion of the *A-Plus* package is just as easy to use. Just choose your "tool" from the icon menu on the left-hand side of the screen, position the cross-hair cursor to the point on the screen where you wish to start, press RETURN, create your image, and press RETURN when you're done. To get back to the menu, press the ESC key. The utilities are just as easy. The nice thing about *A-Plus* is that you don't have to know anything about DOS or file naming limitations that are inherent with it. *A-Plus* allows you to name files and binders with up to 20 characters each.

A-Plus handles errors very well. The program intercepts errors from disk drives and printers, and presents them in plain and simple terms so that you can understand what the problem is.

If you need a word processor that can incorporate graphics, A-Plus is unbeatable for the price.

The documentation for *A-Plus* consists of a 310-page, three-ring binder divided into four separate areas: a general overview of *A-Plus*, then individual sections on A-Write, Utilities, and A-Draw. Each of these areas is easy to understand and very well organized. The documentation provides appendices that explain the installation of the *A-Plus* software and list the printers *A-Plus* supports, along with hints for dealing with their individual quirks.

A-Plus is designed to run on the IBM PC family of computers or compatibles. The program was tested on an IBM PC/XT with 640K RAM and an Epson MX-80 with Graftrax. If you have any questions regarding whether or not it will run on your equipment, contact Savant at the number below.

Technical support is great! The people at Savant really go out of their way to help solve your problems. I had a problem with my printer not being able to handle graphics generated by the *A-Plus* program. After I talked to the technical support person, the problem was diagnosed as an incompatible printer driver (the one distributed is for the Graftrax Plus). The tech support person asked me for applicable function codes for my printer, then proceeded to ship me, free of charge, a new printer driver to support my printer! Now the only thing that my printer won't handle (and never will due to the model) is superscript and subscript processing. The only drawback with the support area is that the number is *not* toll-free.

A-Plus is definitely worth looking at. If you need a word processor that can incorporate graphics, this package is unbeatable at the price. (Savant Corporation, P.O. Box 1077, Waltham, MA. 02254, 617/891-0638.)

Fullpaint

Published by: *Ann Arbor Softworks*
For: *Macintosh 512K or Macintosh Plus*
Suggested Retail: *$99.95*
Reviewed by: *Janet Hensley*

It's not unusual to for Mac users to find that *MacPaint* doesn't quite do all the things they'd like it to. Until now, the solution was to add desk accessories and other program add-ons, piecing together art tools as best you could. *FullPaint* offers a considerably more streamlined option than that "patchwork" disk.

FullPaint offers all the features of *MacPaint*, as well as Skew, Free Rotate, Distort, and Perspective. Skew allows an image to be slanted left or right, which might be used in conjunction with Copy and Flip Vertical to create a shadow. Free Rotate allows a selected image to be rotated in one-degree increments. No longer are you limited to straight up and down or sideways. Perspective creates a symmetrically opposed distortion—pull the left bottom corner out and the right bottom corner automatically adjusts to match, as if you were using the mirrors tool. Distort is your chance to get wild—select any object and treat it like silly putty. Stretch one corner out, move another in.

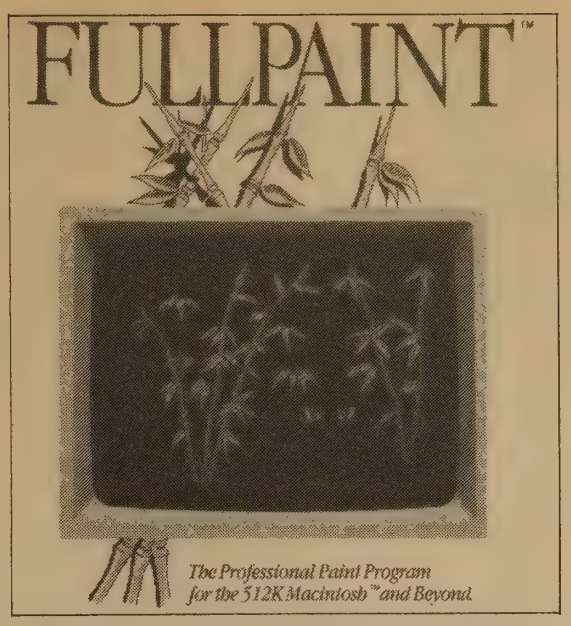
Almost every function or menu selection (such as Grid or Fatbits) now has its own command key, saving you a lot of time. However, probably the best feature is being able to have four windows open at a time, so you can work in four file windows simultaneously. The four screens don't necessarily have to be used for four files, though. How about using one window for the file being created, and another one or two as scratch areas—places to put individual pieces together with lots of elbow room? When ready, simply copy the completed object and paste it to its final location.

Another new feature is the ability to choose one of three different types of screens to work in: a regular *MacPaint*-like screen, with added scrollbars, a full-display with no menu bar. If none of these screen options allows you to select a large object which extends past the displayed area, don't worry. The selection marquee will scroll, allowing you to copy a tall tree or a long fire engine.

Also available are the built-in Rulers, MouseCrawl and MouseSpot, which shows where your mouse is on the screen according to the variable unit rulers (inches, centimeters, picas), and allows the cursor to be moved one pixel at a time quite easily. Another new feature is the choice of one custom Font size, which can be changed at any time. You will have to do some cleaning up in FatBits if you decide to use this, but if you need to have a 99 point font, no problem.

Two utility programs are included in the *FullPaint* package, LazerPrint and ColorPrint. LazerPrint allows you to enlarge files up to 400% and to split the document into multiple parts to enhance the picture, allowing it to take advantage of the 300 dots per inch resolution of the LaserWriter.

The ColorPrint program works with both *MacPaint/FullPaint* files and *MacDraw* files. ColorPrint uses the standard color separation technique, which involves creating a separate file for each color to be in the completed picture. Each individual color overlay file has only those elements in it which correspond to it. In the example supplied with the disk (a rose), there are three colors: red, green and black. The red file contains the rose itself, the green file contains the stem and leaves, and the black file has the outlines of the complete rose for enhancing contrast. If you have the original ImageWriter, the program will prompt



you through the color ribbon changes. If, however, you have a Scribe or an ImageWriter II, simply change to the multicolored ribbon appropriate for your printer and it will print all the colors in one pass.

FullPaint's installation is simple: copy the program files to any diskette or hard disk. When the copy is done, click on the *FullPaint* icon and you're ready to work. For Color Print, installation is as difficult as putting on color ribbon on your printer for switching colors. This lack of copy protection is a commendable new feature.

FullPaint is just as easy to use as *MacPaint*, and, in some cases, easier. The short cuts display is especially helpful, as there may be more than one short cut for a particular function. The most important consideration is that the *FullPaint* tools, menus and commands are designed to be instantly familiar to long-time *MacPaint* users.

FullPaint is an excellent program from a company which obviously makes an effort to support its customers through constant improvements to an already excellent product. (Ann Arbor Softworks, 2393 Teller Road, Suite 106, Newbury Park, CA 91320, 805/375-1467.)

Graphics Integrator 2

Published by: *Inkwell Systems*
For: *Commodore 64/128*
List Price: *$29.95*
Reviewed by: *Sue Albert*

Since the first caveperson pulled a burnt stick out of the fire and drew on a cave wall, artists have found the natural way to draw was with the tool held in the fingers and placed directly on a surface. For the Commodore 64/128, the Flexidraw Lightpen, by Inkwell Systems, is this sensitive tool with it's rock solid, full featured drawing program and industrial quality pen.

It's been puzzling why more developers haven't included drivers for Flexidraw in their graphics packages. Now Inkwell has come up with a next-best solution that benefits all graphics users. The *Graphics Integrator 2* program, with five program modules, is a format converter that allows interchange between a wide variety of graphics and several word processing programs. It is compatible with most printers/interfaces and uses the pen or keyboard for input.

You can convert in any direction. Hi-Res to Hi-Res, Hi-Res to Multi-Color, Multi-Color to Hi-Res, Multi to Multi. Get the picture? You can quickly and effortlessly convert a Hi-Res drawing, to *Print Shop*, *Print Master* or *Newsroom* graphic icon, with no loss of resolution. Say "Good-bye" to tedious drawing options. Cheer as you easily drop your graphics into GEOS or Paperclip. Convert *Computereyes*, *Cadpak 64*, *Billboard Maker*, *Doodle*, *Koala* and more! Produce a tiny graphic for a label or print a poster using the same drawing or video dump. Flexability is the game-name.

Easy to use? Good golly yes! The well organized manual demystifies complex concepts by illustrating each screen choice and procedure, a friendly tutor even we right-brain types can appreciate.

The self-running Slide Show feature alone is worth the price of the disk. It offers three dissolves with options to use one style, rotate at random or sequentially, and change at any time . . . great potential for business or teaching presentations.

Picture Printer allows printing of files converted to Flexidraw in two sizes and several page placements, even side-by-side. Color printer drivers can be loaded separately.

There is an unavoidable down side to all this creative choice. Color can be lost or changed in converting Multicolor to Hi-res, Hi-Res to Graphic or Multicolor to Graphic. When converting Hi-Res or Graphic to Multicolor, horizontal lines thicken. A Hi-Res picture taken into GEOS becomes "squashed," and when converted to a graphic icon it becomes elongated. I lost ten pounds, the easy way, in a self portrait.

Graphics Integrator 2 isn't flawless. I would wish for access to data disk directories, with block size, and formatting of disks from within all program modules. Too few "go-backs" cause a "you can't get there from here" response. The program appears to crash if improper data disks are inserted for Slide Show (resurrect with a few returns). The program directory cycles endlessly, a real crash, if left in the drive when some data disk directories are requested.

Despite a few warts, I highly recommend *Graphics Integrator 2* as the most sophisticated conversion program I've tried. It helps squeeze the best out of those 64-wonderful-k's. (Inkwell Systems, PO Box 85152 MB290, San Diego, CA 92138.)

GAMES

Handwriting Analyst

By: *Garth Michaels, Marilyn Maze and Dorothy Hodos*
Published by: *Career Information & Software Associates (1986)*
For: *IBM PC and compatibles (128K, DOS 2.0 or higher)*
List Price: *$50*
Reviewed by: *Mike Markowitz*

The belief that a person's handwriting reflects his or her personality is widespread. Graphology, the study of handwriting, aspires to being considered a science, and the testimony of expert graphologists is often accepted in court when the authenticity of documents is in question.

Can the expert knowledge of a handwriting analyst be reduced to a series of multiple choice questions that drive the output of a computer program?

The authors of *Handwriting Analyst* think so. The package is billed as a sort of party game to amaze and delight your friends, but the method embodied in the program reflects over a hundred years of graphological theory and research.

The program menu offers the option of a quickie analysis based on a signature alone, or a full analysis based on a sample of text (such as a handwritten letter or note). The output may be either a Quick Report or a Detailed Report. Up to 20 analyses can be saved on the program disk, which is not copy-protected. The printed reports cover six "factors": physical and material drives, emotional characteristics, intellectual style, personality traits, social behavior and vocational implications.

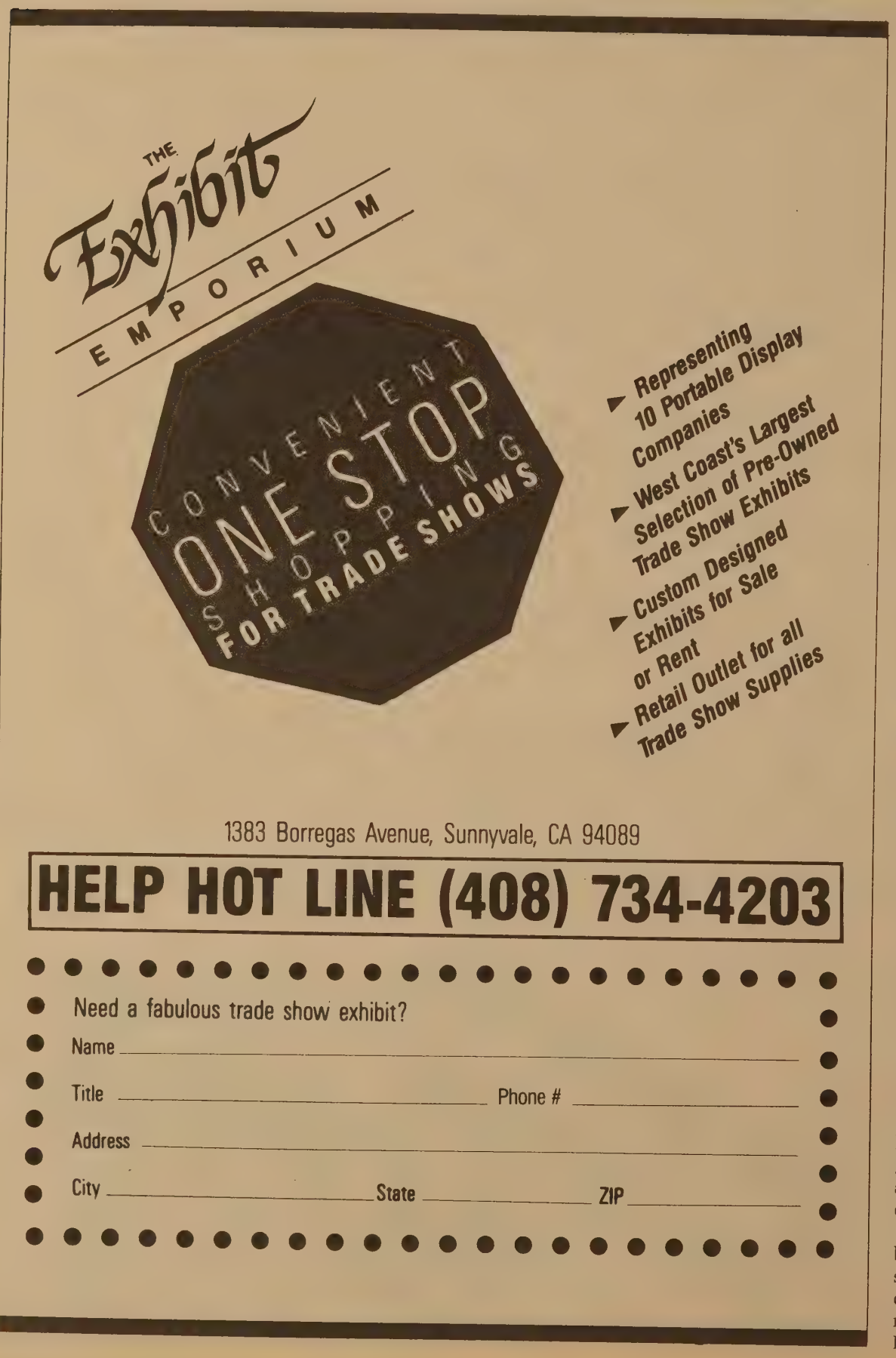
To generate this multidimensional profile, *Handwriting Analyst* asks you 63 multiple-choice questions. Is the slant of the writing mild, average, above average, extreme or variable? Is the spacing between words wide, balanced or crowded? Is the legibility high, moderate or low? Are loops tall or short? Is the crossbar of the "t" high, low or in the middle? Are capital letters elaborately flourished, plain or printed. A 72-page manual gives clear graphic examples of all the esoteric patterns and variations the graphologist uses to read the character behind the scrawl.

It takes about a half hour to work through the questions using a text sample, and rather less time for a signature. I tried out the program on scraps of writing from most of the people I know well (a mercifully small sample). The results were generally consistent with my prejudices, but nothing like the stunning shock of recognition we often get from a really good psychological test like the Myers-Briggs.

The output reports are compiled from a library of about 600 statements, which are linked in complex ways to the handwriting questions. Six hundred items is not much of a range to capture the diversity of five billion human beings (or at least the two billion or so who can write the Roman alphabet).

The program manual includes an excellent Glossary of graphological terms, a brief history and bibliography. Samples of historic and celebrity autographs are included along with a sample of Ronald Reagan's handwriting (he crosses his t's right at the top, whatever that means).

The program is packaged in a slim cardboard folder. It runs smoothly on every PC clone I tried. It is great fun, but should not be taken seriously as a psychometric instrument. (CIASA, 2017 Cedar Street, Berkeley, California 94709, 415/524-4976.)



BOOKS

My First Book About Computers My First Computer Dictionary

By: *Luca Novelli*
Published by: *Microsoft Press (1986) hardcover, 64p. for ages 10 to 12*
List Price: *$9.95 each*
Reviewed by: *Mike Markowitz*

Computer books for kids are usually disappointing (at least to this semi-adult reviewer). They are usually too general, when learners want specific facts. They are often patronizing, underestimating the ability of young minds to master complexity. Hey! every kid is able to master her own native natural language, which is something no computer program has ever done. If your kid wants to know about computers, don't buy him a book. Buy him a computer.

Nevertheless, when Microsoft Press decides to bring out a line of computer books for kids, this is something worthy of notice, because Microsoft doesn't publish junk. What makes these titles even more remarkable is that they are translations from Italian. Being of Italian origin, as you might expect,

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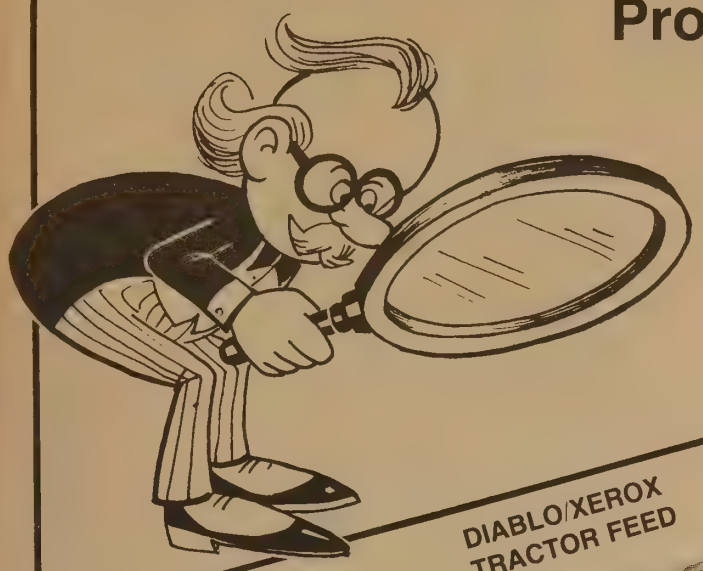

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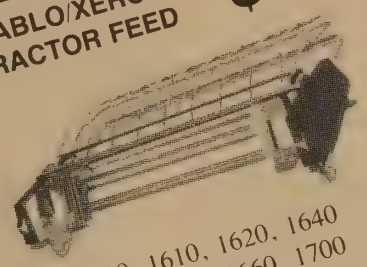

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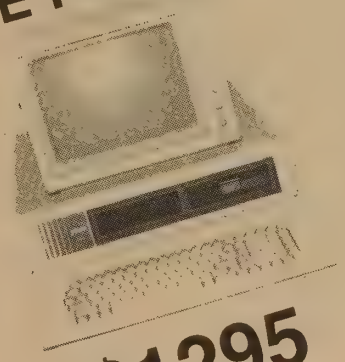

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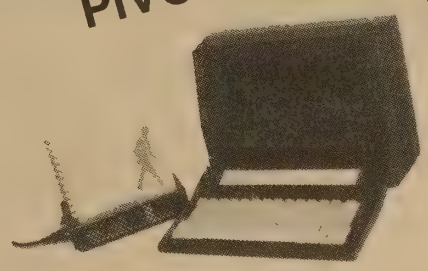

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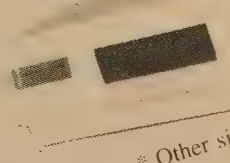
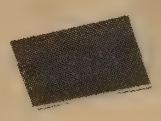


* Other sizes available.

FLOPPY DRIVES FOR APPLE



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they are stylish, colorful, technically accurate and informed by a warm, gentle sense of humor.

My First Book About Computers takes Wendy, Bill and their dog Field, on a quick tour through the history of computing, the operation of a microprocessor and the variety of computer applications in schools, business, industry and homes. "A computer is a machine. And like other machines, it was designed and created by people."

My First Computer Dictionary covers 60 main entries, with 144 different terms listed in the Index. The definitions include: ASCII, Binary, CPU, Digital, EPROM, Firmware, Input/Output, Kilobyte, LOGO, Operating System, PASCAL, RAM, Syntax, and many others.

Each entry on a computer language includes a short program or sample of code.

The books are illustrated in a whimsical cartoon style. They are ruggedly bound in glossy board covers, and should stand up to hard usage. They would be an excellent choice for any elementary school library. Another title in the same series covers the BASIC programming language. (Microsoft Press, 16011 NE 36th, Redmond, WA 98073-9717.)

The Apple IIGS Book

By: *Jeanne Du Prau and Molly Tyson*
Published by: *Bantam (1986)*
softcover, 240 pages, illustrated
List Price: *$18.95*
Reviewed by: *Mike Markowitz*

The agony of being a technical writer consists largely of trying to document complex systems while they are still being designed. A technical writer is someone who bothers engineers with questions while they are trying to work. So I felt a natural sympathy for the authors of *The Apple IIGs Book*. But knowing the rush of last minute configuration changes that attend the birth of any electronic device, I was naturally skeptical to see the book on sale months before any of us lowly ones would be permitted to purchase the wonderful new computer.

Surely the thing Apple finally delivers will differ in many details from the thing described in the book. Nevertheless, this is a solid work of documentation. It was an inside job. The authors are senior writers in Apple's User Education Department. They explain the tangled story of the genesis of the IIGS, and put it in a context that any Apple II user will understand.

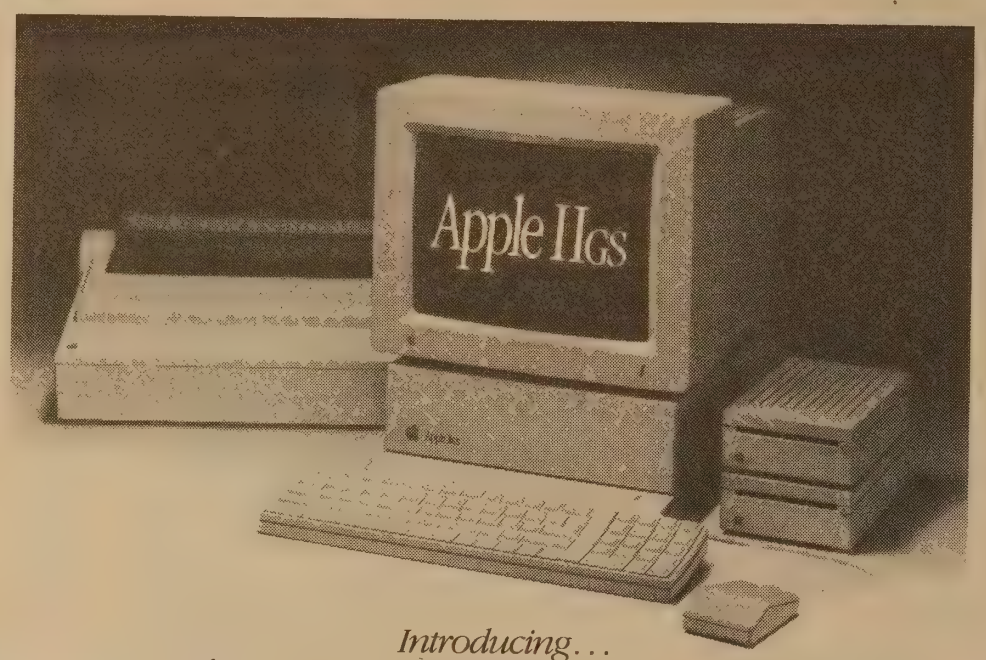
Chapters cover the mouse interface, the Finder, classic applications, peripherals and the control panel program. A final chapter covers very basic computer concepts for beginners in a thoughtful, non-patronizing way. This is not a reference for the hardcore hacker. For the techies, Bantam is also publishing *The Apple IIGS Toolbox Revealed* by Danny Goodman.

There is a good glossary and a real index. The book is illustrated with photos of the prototype hardware and screen shots of the prototype software.

The Apple IIGS Book is clearly aimed at people who are considering this important new computer. It works. Reading the book will make any Apple II person want to run out and buy one right away.

The book is nicely printed and bound. Although $18.95 may seem like a steep price, it is a small investment for a user contemplating a $1300 plunge into a new system. It might be kept in mind that, as Apple employees, the authors are cheerleaders for the corporate party line. But it will be many months before critical, independent sources start writing about the IIGS with real expertise.

The first chapter of *The Apple IIGS Book* appeared in the November, 1986 issue of *A+* magazine. Bantam has always been able to get books on hot topics out the door faster than any other publisher. *The Apple IIGS Book* is a useful, informative quickie. (Bantam Books, 666 Fifth Avenue, New York, NY 10103.)



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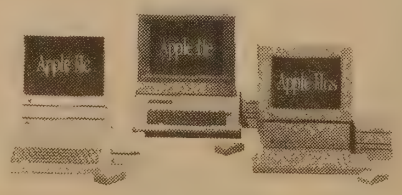

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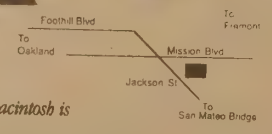

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Term Paper Writer

Produced by: *Paul Zuzelo*
Published by: *Activision (1986)*
For: *Apple II series (128K) or IBM PC and compatibles (256K)*
List Price: *$59.95 softcover*
Reviewed by: *Mike Markowitz*

Even for good students, writing a term paper is an ordeal that is often left until the last possible moment and accompanied by panic, stress and substance abuse. Writing a paper is also a proven and powerful way to learn important skills of research, organized thinking and verbal expression. Unfortunately, as educational standards continue to decline, it is an experience that fewer and fewer high school or undergraduate students will enjoy, or suffer.

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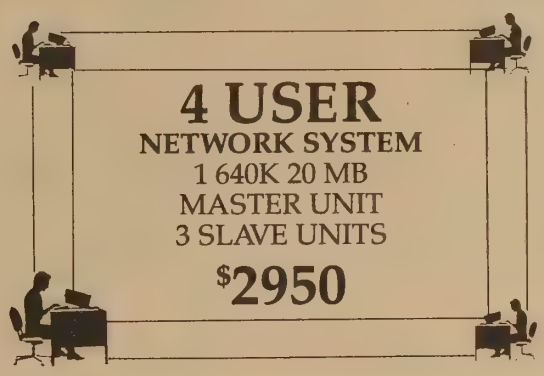

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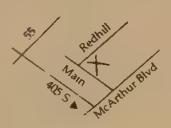

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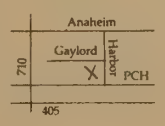

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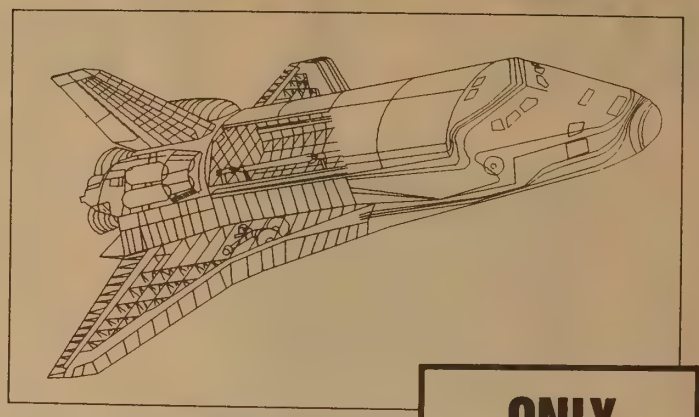

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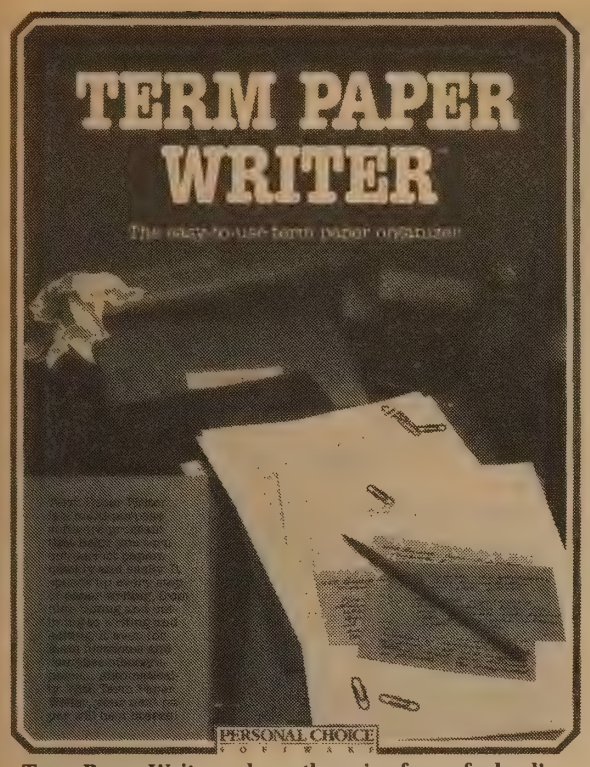

Term Paper Writer reduces the pain of one of school's most harrowing and valuable experiences.

makes it possible to have your outline displayed alongside your text.

The Writer: A no-frills word processor limited to about 20 pages of text. Features include an insert/overstrike toggle, block move, copy and delete (with an Undo key), a wide variety of cursor movement options, and visible control characters that define print formats. A nice feature for writers working to a specific length requirement is the running word-count total that can be displayed by pressing control-W at any time.

The Footnoter and Bibliography Compiler: Uses the notecards created with the Notetaker to insert footnotes and format the bibliography. The user must select one of three footnote styles (which cover the most widely used standards for college courses in the Humanities and Social Sciences).

Term Paper Writer takes up both sides of a disk. Your files must go on a separate work disk for each term paper. The Apple version of *Term Paper Writer* uses Diversi-DOS, a high-speed customized operating system. The IBM PC version uses a work disk formatted normally with MS-DOS. While it is possible to use *Term Paper Writer* on a single-drive system, a second drive makes the program much easier to use. The program is copy-protected, and neither version makes any provision for hard disk installation.

Configuring the program is quick and easy. The menu structure is logical, and there are pop-up "Help" windows for each of the modules.

The Apple version runs on the Laser 128 and Franklin 2000. The PC version runs on the Tandy 1000. Most dot-matrix printers are supported, but not daisy-wheels. Many students get true letter quality printers because traditionally-minded professors refuse to accept dot-matrix output. The program should have provided a standard Diablo 630 or plain TTY printer driver!

The 100-page manual is spiral-bound so it will lie flat when opened. This is a great convenience. The documentation is generally clear and well-illustrated with screen shots, but it suffers from the common economy measure of trying to fit Apple and PC versions into one book. The manual has a good index. *Term Paper Writer* is complex enough that the average user will need to study the manual quite thoroughly before attempting to write a paper.

Perhaps the greatest deficiency in the program is the lack of a spell checker. For professional writers, spell checking may be a convenience, or an afterthought, but for student writers it can be a difference of a whole letter grade or more. Even if it required another disk, a generic spell checker, for the common words most frequently missed, could have been included in this package at little additional cost.

Term Paper Writer is not a substitute for a general-purpose word processor. While it would be a good product for a college freshman with a new Apple or PC clone and some previous computer experience, I would not recommend it as the first application program for beginners in high school. *Term Paper Writer* implements a very structured, disciplined approach to writing. It would not be much help to a student with no previous research or writing skills. An inspired high school teacher with plenty of computers could build a wonderful writing course around this product (but an inspired teacher doesn't need computers). One danger of a product like *Term Paper Writer* is that a skeptical veteran teacher might have difficulty believing that such polished, well-organized work was actually done by a student.

While the integration of the Notetaker, Writer, Outliner and Footnoter is smooth, it is still not a good fit to the way most writers actually work. A true "windowing" environment, where multiple bits of text, notes and outlines can be shuffled around on a screen as messy as a real desk top is far more intuitive, flexible and (potentially) creative. This, of course, requires more advanced hardware than the Apple II or basic IBM PC, but it is certainly the direction for the future of learning. The team of seven programmers and three designers that created *Term Paper Writer* should now try for something more ambitious than a simple port over to the Macintosh, GEM or *Windows* environment. (Activision, Personal Choice Software, 2350 Bayshore Pkwy., Mountain View, CA 94043.)

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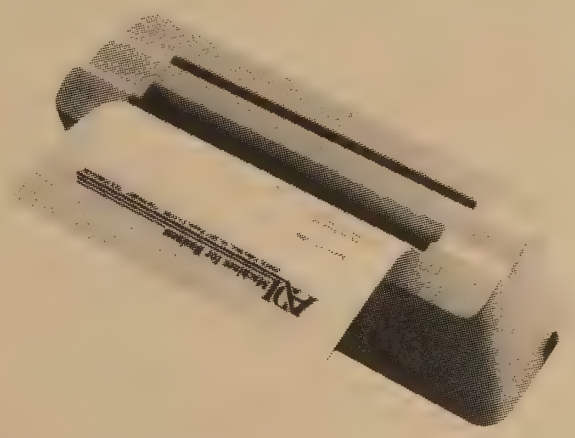

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USER GROUP NETWORK

By Mary Eisenhart

This month *MicroTimes* moves into a new dimension in Southern California. Now all you modemers can read the current issue on the **American TeleWeb** system, (213) 372-4050. **Dave Silverberg** has done an excellent job of posting our stories in a simple, easy-to-use menu format, so even a beginner should have no problems. And when you get done reading *MicroTimes*, you can go on to read TeleWeb's other boards, including the *Easy Reader* newspaper, a restaurant guide, a home loan board, and much more. The board is free to callers, so you'll be able to peruse its contents at your leisure. It runs at 300/1200 baud, 7-1-N.

In other LA news, **Michael Johnson** has help for beginning computer users. Neophytes wandering through the silicon jungle are invited to contact **LAC-BUG, the Learn About Computers — Beginner's Users Group**, at 6506 Arizona Ave., Suite 127, LA 90045, (213) 372-8909. The group supports users of all computers, and even welcomes those who don't have a computer yet. According to Michael, the club is "great for the absolute beginner, computer-shy, completely confused adult and all children ages three years old and up." Members receive educational materials and hands-on training; those who can't make the meetings in the greater LA area can receive help via mail, newsletter, cassette tapes, telephone, video and modem. Adds Michael, "We are also starting a computer, peripherals and electronic equipment exchange post where members can trade upwards, downwards, sideways or whatever—non-commercial." He concludes, "This is the perfect organization to learn what computers are all about, how individuals can use the computer in their own lives, stop being afraid of computers, take command and control of computers, and learn how to make computers make you money." So if this sounds like something you could use, give LAC-BUG a call—the phone is a 24-hour line.

Foreign-language word processors take note: **Ari Davidow** of Berkeley sends word that there's a **Hebrew Users Group** in Berkeley, which is, he says, "a useful resource for anyone who wants to play with the letters or has a need to type Hebrew-based languages on a computer." The club was organized by **Jack Love,** who can be reached at (415) 845-7793.

In the **Good News For Orphan Computer Users** department, we have a letter from **Allen L. Wilkinson** of **Wilkinson Software** in Westminster. Wilkinson Software offers comprehensive support for users of **Eagle** computers. Allen points out, "Your readers may be interested in knowing that PC-compatible Eagle systems can run EGA, Western Digital controllers, RLL controllers, networks, EMS, etc. They may need the latest upgrades; even the earliest 1600s and PCs can be updated to a very high degree of compatibility." Wilkinson offers a free tech support line at (714) 895-1759, 9 am-5 pm Pacific Time, in addition to a full line of parts and service. "Everyone at Wilkinson Software formerly worked at Eagle Computer, so we are very knowledgeable about the system," says Allen. "We've been in business for a year now, so we are fairly well established, but it is difficult to reach all the Eagle owners out there. That is why we are writing." Well, Eagle owners, consider yourselves notified.

Curtis Jones sends in an update on the activities of **APLBUG,** the **APL Bay Area Users Group.** The March 24 meeting (held, as always, at I.P. Sharp Associates, 220 California Ave., Palo Alto, at 7:30 pm), will feature a presentation by **Ed Myers** of the APL*PLUS system for the Macintosh. Ed will also answer questions about APL for the PC.

In other APL news, **Ed Cherlin** is working on a project to bring a public-domain version of APL (A Programming Language) to schools, with versions slated for the Apple II, C64/128, and CP/M machines. The objective is to make copies of the language available so that students will be induced to learn the language. He's seeking contributions to fund the project. If you're interested and want to know more, call Ed at (916) 938-4684.

Something for the collectors in our midst: **David Hewit** of Middletown, PA sends word via **The WELL** that he's written software for use in cataloguing record, tape, video, etc. collections. It includes fields for date recorded, band name, theater or studio name, city, state, type of music, recording source, sound/image quality, and noise reduction. The program can generate over a dozen different reports, and will print cassette tape labels. It runs on IBM PCs and compatible machines. David is willing to send a free demo copy to all interested parties—he'd like a donation of $2 to cover costs, but it's not required if you're an impoverished collector. He can be reached at (717) 944-5079, 2423 Schoolhouse Road, Middletown, PA 17057, if you'd like more information.

The **Bay Area AT&T Users Group,** whose birth and infancy we've been watching with interest, seems to be off to a fine start. We received the first issue of their newsletter, which included such useful information as the AT&T Tech hotline (800/922-0354) and the names and numbers of several AT&T technical consultants. Meetings are held on the first Wednesday of the month, usually at the AT&T Building, 1000 Broadway (at 11th), Oakland. Call **Maurice Aranda** (415)972-5479 for information. The club recently held elections, but the position of vice chairperson is still vacant, so if you think you can contribute to the world of AT&T users, please give Maurice a call ...

Jim Thomas of **AUGment,** the **Amiga Users Group** in Fremont, has notified us that the group's meeting location has changed. Meetings are now held on the second Friday of the month at Hewlett-Packard, 5301 Stevens Creek Blvd., Cupertino. You can call the AUGment hotline at (415)651-1160 for more information.

Robert Williams would like to alert AutoCAD users in the Santa Cruz area to the existence of the **AutoCAD Users Group of Santa Cruz.** This group is just starting out and is actively looking for new members. Meetings are held at the Citicorp Conference Room, 806 Ocean St. in Santa Cruz, on the first and third Tuesday of the month, from 7 to 9 pm. Interested parties are invited to call (408)462-0448 for further info.

Pete Ellison of Burbank, a stalwart user of Tandy-Radio Shack computers, writes that the erstwhile **California Computer Federation** (a TRS group) has changed its name and has plans to continue its expansion throughout California. The club now goes by the name of **United Computer Federation,** and Pete sends us listings for four local chapters: San Fernando Valley (818) 840-8902; Los Angeles (213) 420-7632; Orange County (213) 692-3073; San Francisco (415) 469-3172. If you'd like to know more, or if you're interested in starting a local chapter, give Pete a call at (818) 840-8902.

The **Commodore Connection User Group** of Antioch has had some changes, according to publicity chariman **Mark White.** The group now meets at Homestead Savings, 1411 A St. in Antioch, at 7:30 pm on the third Monday of the month. It also operates a BBS at (415)458-1005, 300/1200, 24 hours, for Commodore users only. If you need more information about the group, call secretary **Nina Hoops** at (415) 754-9054.

Also on the BBS front, **Valley Systems Software** in Southern California is operating a board that takes the concept of the free BBS into a new dimension—this one has an 800 number. The **Computer Tele-Comm System** (818) 362-0995 offers meeting places and computer supplies; it also has contests, with prizes such as a 20 meg hard card, 100 diskettes, a $50 gold piece and more. Callers access the board through its direct line (the 818 number) for their first call; after that they have access to the 800 number. The board runs at 300 or 1200 baud, 24 hours a day, 8-N-1.

Frank Orem of Walnut Creek sends updates on **POPnet,** a low-cost game and social system with boards in several areas, each with its own user base and particular atmosphere. Each board has at least 10 lines, so it's easy to get on, play games and interact with other users. According to the clippings he sent, the boards enjoy great popularity among the teenage computerist population, so if this sounds like your kind of online activity, check it out: POPnet Berkeley (415) 527-4510, POPnet San Ramon (415) 830-1191, POPnet Walnut Creek (415) 932-4263. Frank also says that he's interested in talking to those who might want to set up their own POPnet board on a franchise basis; if you're interested, give him a call at (415) 932-1146.

Devin Woods, sysop of the **Affection Connection BBS** in Simi Valley, announces new improved service, with multiple dial-ups and inter-line chat capability (which, he says, is free for the first 60 days; after that, he and co-sysop Bruce will determine a reasonable rate to charge users). He adds that the accounts of paid users of the old Affection Connection board will be credited to the new board. Says he: "We expect that the old regulars will settle right in and make themselves at home, and we know they'll drag in some interesting folks for you to meet. Affection Connection has been sub-titled 'The Manor House,' which can be your home away from home. We've started to add material to the download library to help spread the wealth of public domain software. There are rooms set aside for all the standard fare. If you can't find a room that suits you, we'll call in the carpenters and have them build a new addition for you!" Devin and Bruce aim to please, and they invite your calls at (805) 527-7464 and (818) 704-8588.

That's about it for this month. We hope to see some of you at the **West Coast Computer Faire** at the end of the month in San Francisco—there'll be plenty of exciting exhibits and conferences, and we hope you'll come by our booth and say hello. Meanwhile, keep those cards and letters, virtual or otherwise, coming: US Mail to MicroTimes User Group Network, 5951 Canning St., Oakland, CA 94609, and e-mail to **microx** on The WELL, (415) 332-6106. Southern California users will soon be able to send us e-mail on the TeleWeb board—we'll keep you posted. □

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BULLETIN BOARDS

209

Region 7 TEC Center BBS. (209) 571-5085. Specializing in music and schools. 24 hrs, 300 baud. Sysop: Dan Guerra.

Inn Finity BBS. (209) 521-6240. Inn Finity is an Atari based BBS. Operates on a 130XE with 320K. Signalman 300/1200/2400 baud, 24 hours a day. ATASCII—ASCII. Sysops Buzz and Jann Kelley.

Bullseye BBS. Stockton, CA. (209) 474-FIDO. IBM and compatibles. 300/1200/2400 baud. Open 24 hours, 8-N-1, FidoNet 161/31 Valley PCUG. Sysop: Bob Loeber. Validation required. Lots of MS-DOS shareware.

The Spotlight BBS. (209) 368-5591. 300 baud, 24 hours, 8-N-1, dual drive Commodore 64 operated. Sysop: The Spot.

213

Aware II (213) 851-0780. Sports BBS with different discussion boards centered around USFL, baseball, etc.

Marina Matchup (213) 397-6300. This Mar Vista-based dating board operates with Martian software.

Lynzie's Motherboard (818) 508-6482/(213) 650-0519. 24 hours, 300/1200/2400 baud, 8-N-1. Private E-mail, download library, dating matchup, interactive chat between users, 4 phone lines on rotary. Public boards include employment, food and restaurant reviews sci-fi, political, debate, for sale and many more. Monthly social happenings for local users. Sysop: Lynzie Flynn.

Bulletin Board System. BBS devoted to handicappers and racing fans in So. Cal. On line every weekend. Log-on: race data for Santa Anita, Hollywood Park and Del Mar. (213) 934-6026.

Videodrome BBS. Where computers and video meet. (213) 324-5882. Open weekdays 4 pm - 2 am, weekends 12 pm - 2 am. A Commodore 64 system.

HUG1. The official BBS of the Hollywood Commodore User Group (HUG). All HUG members and visitors are welcome to drop by. (213) 874-8256.

The Wargames RBBS. Call for one of the best IBM RBBS around, running with the latest merge for RBBS-PC. Win free time weekly with secret password. Features include the latest PC news, special news reports, BBS listing, messages, e-mail, downloading/uploading, color/music online. Best of all, it's FREE! Operating 24 hours a day at 2400/1200 baud. NO 300 BAUD ALLOWED! Sysop: Jason Lin (213) 393-9777.

International Collectors Network. Coins, stamps, baseball cards, books, records, antiques and anything collectable can be bought, sold, or traded on the International Collectors Network BBS. Regional lists of collector events and shows in many categories. Also names and addresses of many collector organizations. Accessible using PC Pursuit. Data phone available 24 hours, 7 days at 300/450/1200/2400, 8, N,1. (213) 204-0646.

The Computer Consultant's Network, (213) 479-4074. Running a modified version of Martian! Software. 24 hours a day. This is not a job board, but merely a place for computer professionals to network and share information.

ARBBS (Average Remote Bulletin Board System) (213) 325-0213. 300/1200 baud, 8 bits, no parity, 2 stop bits, 24 hours. It includes hundreds of files for Polymorphic, text, Basic, TS1000, TS2068, Amiga, Texas Instruments 99/4A, Apple, CP/M, Commodore, Turbo, Atari. It includes a very extensive BBS phone list. Call now. Free. Sysop Tom Delellis.

Computer Conference Center. (213) 212-5267. TBBS w. Commodore, IBM, TI, Atari, Epson, Apple etc. sub-boards. Large DL with CP/M, MS-DOS and TR-DOS programs. Laurie Flood, sysop.

Hughes Aircraft Message Service. Uploads and downloads for Mac, IBM, Commodore, Atari, etc. Public message boards. (213) 549-9640. 300/1200, 24 hrs., 7 days.

Monolith-1.7 great public boards, private electronic mail, social events. (213) 659-JEDI. 24 hours, 1200/300. Sysop: Erik Goldman.

Mid-Cities Atari ST BBS. 300/1200, 8-0-1, 24 hours. (213) 867-1943. Sysop: Darin Ferraro.

PC Heaven. A multi-computer BBS that features downloads for many different PCs. E-mail, files for various machines, general to SIG message bases. No fees, no special application request forms. Just a fun BBS for everyone. (213) 374-7929. 300/1200, 7 pm-7am M-T, 24 hrs. F-S-S. Sysop: Tony Reeves.

The Mail Box. (213) 402-4079 Lakewood. 24 hours, 300 baud, standard parameters. Features: daily weather, computer news and events, entertainment. Free BBS, sign-on not necessary to read information. Public, for sale, and discussion. Now in our third year. Sysop: Roger Hummel.

Tele-Web. (213) 372-4050. 300/1200, 7-1-N, 24 hours, multi-user. MicroTimes Electronic: Southern California edition of *MicroTimes.* Articles, events calendar, BBS and user Group listings for Southern California, classifieds. Type GO MICRO. Home Loan BBS: Up-to-date home mortgage rates supplied to you by Pacific Mortgage Group, a company that prides itself in getting you low mortgage rates. Rates are updated weekly. Type GO LOAN. Dining-Line: South Bay database of online restaurant menus. Menus may be searched by type of cuisine, price of a meal, name of restaurant, etc. Database includes complete menus and a community forum. Type GO FOOD. LA Weekly Electronic: electronic version of LA's largest weekly entertainment newspaper. Includes feature articles, calendar and events listings, classifieds and more. A new edition each week. Type GO WEEKLY. Easy Reader Electronic: electronic edition of the Easy Reader newspaper. Includes feature articles, weekly calendar, night club listings and classifieds in over 80 categories. Type GO EASY. FREE.

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Jukebox Bulletin Board (JBBS) (213) 670-8053. 8-N-1, 24 hours, 7 days, 300/1200 baud. Message board for buyers, sellers, and anyone interested in antique jukeboxes. Free. CP/M password available on request. No Fees. sysop: Ray Etchepare.

Secret Partner 1. (213) 543-5273. 8-N-1, 24 hour, 300/1200 baud. "Find your long-awaited sweetheart." Walter F. Howard, sysop.

Time-X-Change. (213) 329-3922. 8-N-1, 300/1200 baud, 24 hours. The West's only BBS dedicated entirely to the Timex-Sinclair user. Online games and information programs, full feature electronic mail and message system, public domain software. Free. Sysop: Dave Clifford.

Videoman RCP/M and Media Man Database. (213) 666-8588, 300/1200 baud. Hollywood's only remote computer for the show business and entertainment community. Free comprehensive databases, including hard-to-find products and services (US and Canada), television/motion picture production /post production services (worldwide), Los Angeles restaurant guide, remote access computers (world-wide), People In Entertainment and many more. CP/M, MS-DOS pd programs. 40 megabytes and growing. 7 days, 24 hours. Sysop: Norman H. Strassner.

Bloom County "Nochange" BBS. (213)615-0528, 8-N-1, 24 hours, 7 days, 300/1200 baud. Bloom County is an IBM BBS running Nochange software. This system features online games, file uploading/downloading and the best e-mail system around! Call and join our Quarton-The Later Years D&D message base. Sysop: Brody Schiess.

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CompuCenter Long Beach. (213) 421-1041. 8-N-1, 24 hours, 300/1200. Multi-interest board in Long Beach with everything from Aviation sub-board to Mature Topics and IBM, C64/128, and Amiga. Sysop: Ken Cothern.

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The Starship Sardonyx Net. (213) 467-6667. 8-N-1, 300/1200, 24 hours. We offer extensive general files, online games, up and download subs, 8 message bases, e-mail. Large public domain section for Commodore users. Sysop: Zed Yago.

LEGACY/The Law Network. Free exchange of messages and information on Computer Law, Entertainment Law, and Communications Law, and forum for new ideas and directions in the practice of law and administration of justice. Features include e-mail, online law journal, standard legal forms and agreements, and a pro bono conference for free legal advice to non-lawyers. Operating 24 hours at 1200 baud, 8-N-1. Accessible using GTE's PC Pursuit. Call (213) 553-1473. Sysop: Robert H. Kohn, Esq.

BBS-64 Shopper. (213) 598-5841. 8-N-1, 24 hours, 300/1200 baud. Sysop: Scott D. Edson.

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K&L Tele-Catalog. (213) 327-2255. 24 hours, 300/1200, 8-N-1. 27 sub-boards including electronic and computer shopping, general board, game boards, club boards, classifieds, tips and tricks. No fee. Sysops: Louis B. Dubin, John Altpeter.

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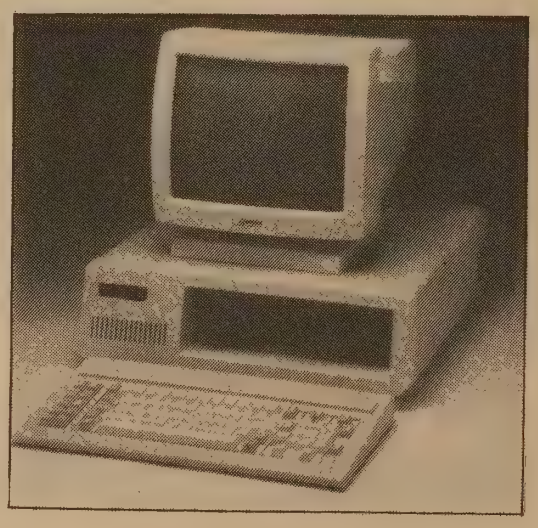

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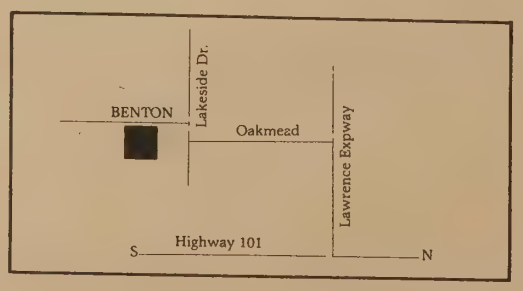

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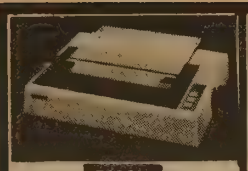

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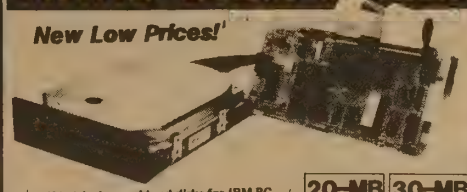

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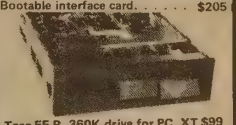

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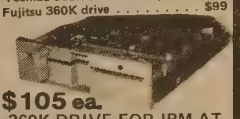

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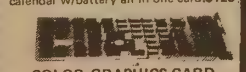

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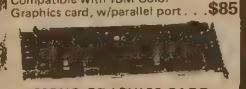

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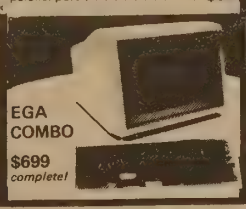
Hercules compatible, with parallel port $89



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Hayes 1200, external, 1200 baud $365
Hayes 1200B, internal w/software $339
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Hayes Transient 1000 . . . . . .$325
AST Reach, 1200 baud *Special* $199
Watson Voice/Data Modem . . . $375
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Turbo-350, Super fast 350-watt. .$535
AT-500, above but 500-watt. . . $625
AT-800, above but 800-watt. . . $685

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7440A Color Pro — 8-pen $975
7475A — 6-pen $1,395
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PC XT AT

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XT
256K, One 360K drive, keyboard (268) . . $1,150
256K, Two 360K drives, keyboard (278) . $1,295
256K, Two 360K drives,20-MB hard disk . $2,149
256K, Two 360K drives, 30-MB hard disk. $2,295

AT
256K, One 1.2-MB drive, keyboard. (68). . $2,395
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512K, 1.2-MB drive, 30-MB hard disk (339) $3,995

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Portable II, 256K 2 Drives . . $2,495
Portable II, 640K, 1 dr, 20-MB $3,295
DeskPro w/256K, 2 drives . . . $1,395
DeskPro-286, 256K, 1.2-MB dr. $2,095
Despro 386, 1.2 & 40-MB Dr . $4,695
Despro 386, 1.2 & 70-MB Dr. . $5,495
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AT&T Green Monitor $225
D.O.S. $65

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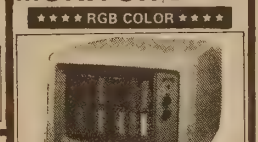

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PGS HX-12E EGA Monitor . . .$499
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Quimax PX-IV — 13" RGB, 720x240 line. Has green switch, tilt & swivel base $445
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Taxan 635 RGB Monitor. $449
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Taxan 770 Multisyn monitor . . .$575
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Quimax DM-14G — 13" green TTL, 750x350 resolution, tilt & swivel base included. 1 yr. warranty $155
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Samsung SF39A7, 12" flat screen TTL Green monitor w/swivel base .$105
Taxan 115, 12" green composite .$125
Taxan 121, 12" green, 1000x360 dots, TTL monochrome $145

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Amdek 310A, 12" amber $169
Princeton MAX-12, 12" amber. $169
Quimax DM-14A — 13" amber TTL, 750x350 resolution. Tilt & swivel base included. 1 yr warranty. $159
Sansung 12" TTL amber monitor . $99
Samsung SM12SFLAA7,12" flat screen TTL Amber monitor w/base. .$109
Taxan 116. 12" amber composite $129
Taxan 122, 12" amber, 1000x360 dots, TTL monochrome . . . . . |$149

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Toshiba 5¼" external drive for 1100+ and 3100 only. $445
Toshiba 3½" internal drive for PC $199
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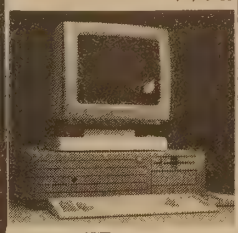

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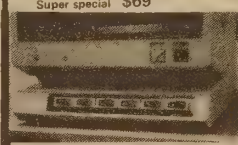

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408

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Byte Bandits ColossusNet. (408) 374-3974, 300/1200, 24 hours. Network USA. Sysop Sam C. Brown.

Evergreen PC Users Group (EPUG-1) (408) 270-4085, San Jose. 8-N-1, 1200/450/300 baud, 24 hours. Sysop Bob Allen. 32 megabytes online, 34 directories created by Special Interest Users.

Bizcomp BBS. Sunnyvale, CA (408) 720-9212, 300/1200, 24 hours. Message base specializing in modem technical help, with a special message conference for sysops. No file transfers available. No registration fee, but requires home & business phone numbers on first call.

Non-Smokers BBS. (408) 298-4277, 298-GASP, 8-N-1, RBBS PC, 24 hours per day, 300/1200 baud. Sysop: Ed O'Dwyer. Features non-smoking areas in restaurants and hotels, health info, diner's conference, messages, public domain software.

Home Board (408) 299-3801 no fee. A non-profit BBS focused on housing issues in Santa Clara County. 1200 baud, 24 hours M-F (8 am Monday through 5 pm Friday). Sysop Ann Dannelly.

Board III (408) 985-7573. 300/1200 baud, 24 hrs., 8 bits, no parity. Board III is an ongoing experiment in telecommunications. Atari-based, but all computers welcome. Sysop: "The Chairman."

ADV in Lrn (408) 247-4769.

The CATS BBS (408) 356-8902. Computer Assisted Typography Service Typesetting BBS. Online tutorial of PC typesetting, public message bases, 300 baud only.

Sailors Refuge (408) 262-3963. 8/N/1, 300/1200 baud, 24 hours. Something for everyone. NEW: horseracing SIG for the serious track players. Sigs for all computers. E-mail system. Public Domain / Shareware software. Over 40 separate message bases. 15 megs allocated for files. Online 2 years. Sysop: Ronnie L. Pierce.

Bulletin Board Hewlett-Packard BBS. Features HP-current events and user information. 24 hrs., 300-1200 baud, 7 bits, odd parity, 1 stop. NO FEE. (408) 747-1243.

The Man O'War, (408) 243-2370. 24 Hours, 300/1200 baud. Over 52 message bases, organized activities. A member of the Silicon Valley Sysop's Exchange.

Silicon Valley Sysop's Exchange. Merlin's Castle BBS (300 baud only), (408) 578-1563. Sharks Head BBS (300/1200 baud), (408) 247-4810. The Man O'War (300/1200 baud), (408) 243-2370.

SDI Clearinghouse BBS. Morgan Hill, CA, (408) 778-3531, 300/1200 baud, 24 hours. Supports the L5 Society in promoting the development of space.

The Shark's Head BBS - Something for everyone, from serious to ridiculous. No-fee, membership system. We're not only user friendly, we're friendly users. Member SVSE. Dusty & Candy Van, (408) 247-4810.

Bay Area Atari Users Group 24 hour BBS, 300/1200, ATASCII or ASCII. Sysop Mark Bloemenkamp. (408) 249-7722.

NCR BBS of Northern California (408) 744-0556. Bulletin board for all users of NCR microcomputers (PC-4 and Decision Mate V). Learn more about NCR's microcomputers. Contact Lee Sherman or Jim Chandler, 756 San Aleso Ave., Sunnyvale, CA. (408) 743-4933.

Digikron Systems (ZNode 25). (408) 253-1309. ZRDOS/ZCPR3 Macintosh and Apple CP/M, 72 megabytes. 300/1200 baud, 8 bit, no parity. 24 hours/7 days. Sysop: Douglas Thom.

SOFTREK. (408) 438-6506. 8-N-1, 24 hours, 300.1200 baud. Sysop Mike Floyd.

Hotel California. (408) 942-1081. 24 hrs., 300 baud, Commodore oriented.

The Flying Fido. Fido network 143, node 23, is now up and running 24 hours per day, except during FidoMail. 300/1200 baud, (408) 946-3183. Special interest in aviation; ul/dl of pd software. Free.

Association of Apple 32 Users BBS. (408) 263-0299. 24 hrs., 300/1200. Sysop: John Griffith.

Sofia System. (408) 257-1853. (300 baud). 1-N-8. 7 lines real-time conferencing, 2 channels of 2-party chats, very efficient electronic mail, scrolling bulletin board, linked to stations across the USA. Membership: Level I (e-mail capability) $15/month; Level II (no e-mail) $10/month. (408) 257-1966 voice.

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Public Domain Software Special Interest Group (PDS-SIG) BBS. San Jose, CA. (408) 270-4085, 8-N-1, 300/1200/2400, 24 hours. Features: 37 directories, 126 meg of files, extended time registration and membership. Public Domain Software Store, 10 Public Conferences. Find the latest and most popular programs and shareware in our vast library of files. Sysops: Bob Allen and John Lawrence.

The Snake Pit BBS. (408) 266-5895, 300/1200, full duplex, 8 bits, no parity, 1 stop, 24 hours. Commodore ul/dl.

Dynamic Resources BBS. (408) 972-9750 San Jose, 24 hrs, 7 days, 300/450/1200, no fee, registration required. Business and computer service oriented, but all are welcome. 20 megs of public domain software available for download. Computer supplies offered at low $$. Sysops:Terry and Sharon Woolsey.

WYRLD WYRM BBS. Role-playing games, computer games, and science fiction. Open access, everyone is welcome. FidoNet node 143/12. 9 am- 6 pm weekdays, 10:30 pm-6 am every night. 300/1200 baud. Robert Plamandon, sysop. (408) 263-8134.

Tele-Play. (408) 723-9003. 24 hrs, 300 baud, program matches parameters. Sysop: "Titan."

Consumers BBS and Insurance Center, Sunnyvale. (408) 732-4126, 300/1200 baud, 8-N-1, 24 hours. Rate your own home and auto insurance with one of the nations's top 5 insurance companies. Apply for a car loan with Lloyd's Bank. Get the Dealer's cost on new cars. See if your auto has been recalled. Buy or sell a car. Free, no passwords, no time limits. Sysop: Al Moskal.

The Portal System. (408) 725-0561, 8-N-1. New online communications system for the Bay Area. Conferences, e-mail, meetings (CB simulation). Technical forums, social conferences, advertisements. Fast response, easy to use, available 24 hours, no time limits. Over 65,000 postings, many from other networks covering 4 continents. Start your own conference too. Say you saw it in *MicroTimes*.

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The Wounded Land. (408) 736-6490. Active fantasy role playing games. 24 hours, 300 baud. Sysop: The Spirit.

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Tardis Information System. (408) 266-3555, 300 baud, Atari-oriented but all users welcome. Midnight to 9 am only. Tardis Systems is proud to present the debut of a pseudo-real time game simulation called "Night Movement." The plot is to protect the fictitious San Jose Army Base from terrorist attack. There is space for 200 players, and it starts January 1, 1987. Sysop: The Doctor.

Computer Tyme. (408) 732-2187. 300/1200, 24 hours weekends, 7 pm-9am weekdays. Sysop: Gary Araki.

Gino's. (408) 371-2703. 300/1200, Commodore UL and DL. Sysop: Porkchop.

The PET Sematary. (408) 263-3486. Commodore specific, X-Modem, Punter files, XSee. 300/1200 baud, 8-N-1, weekdays 5 pm-10 pm, weekends 10 am-10 pm. Sysop: Grave Robber.

Enable BBS. (408) 998-8927. 300/1200, 24 hours. We're here to provide support for your computer. IBM based, but all users welcome. Also featuring "Dear Enable," the alternative to suicide. Sysops: Rob Ehlers, Tim Duncan.

The Bog BBS. San Jose, CA. (408) 270-4086, 8-N-1, 300/1200 baud, 24 hours. Featuring the largest selection of games for the following system types: IBM, Amiga, Commodore, CP/M, VAX. 66 meg of online capacity with over 32 meg already listed. This is now the second line of the PDS-SIG BBS. Games via Doors also available to registered members. Help directories for each system as well as file compression, game solutions, unprotects and a special members preview directory are featured.

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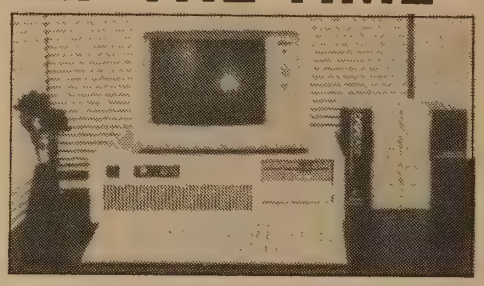

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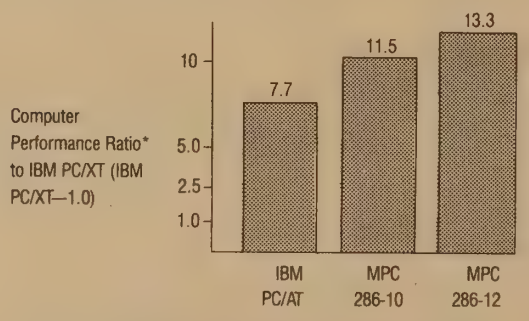

*Based on the Norton Utility SI-System Information Command

Option I/0 device. Most companies charge more for them. PC-TECH believes a CAD workstation needs at least 4 serial ports and 1 parallel port for printer, plotter, modem, and digitizer. So we designed 4 serial and 1 parallel ports on the CPU. MPC-286 CPU has only 36 chip against IBM's 131 chip, which generates less heat, greater reliability and years of trouble free performance.

8			DOS 3.1		DOS 3.1
7			0/1 Wait State		0/1 Wait State
6	512K RAM		512K RAM		1024K RAM
5	1 Lpt Port		1 Lpt Port		1 Lpt Port
4	1 Serial Port		4 Serial Port		4 Serial Ports
3	30Mb Hard Disk (39NS)		30 MB Hard Disk (39NS)		32 MB Hard Disk (28NS)
2	Clock/Calendar w/Battery		Clock/Calendar w/Battery		Clock/Calendar w/Battery
1	1.2 MB Floppy Drive		1.2 MB Floppy Drive		1.2 MB Floppy Drive
	IBM PC AT 8 MHZ		MPC-286 10MHz		MPC-286 12 MHz
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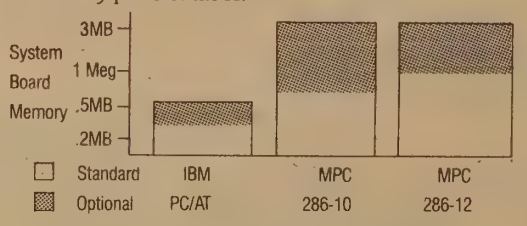

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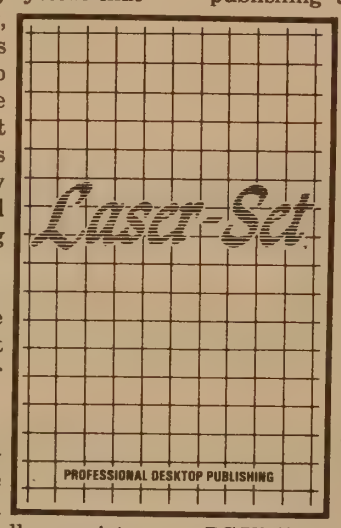

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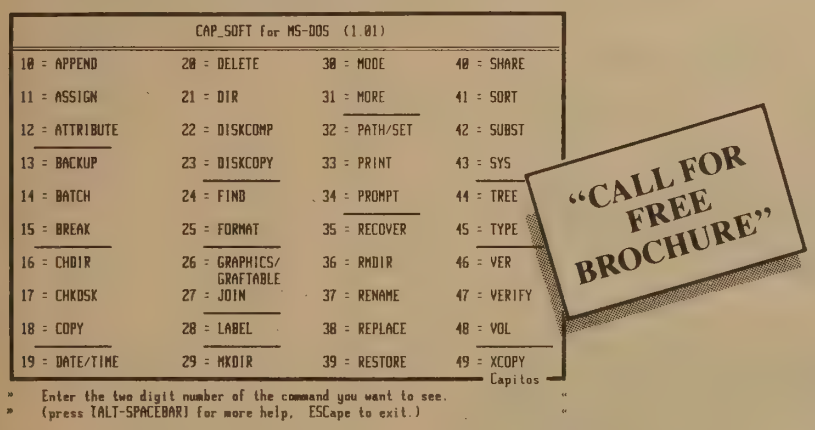

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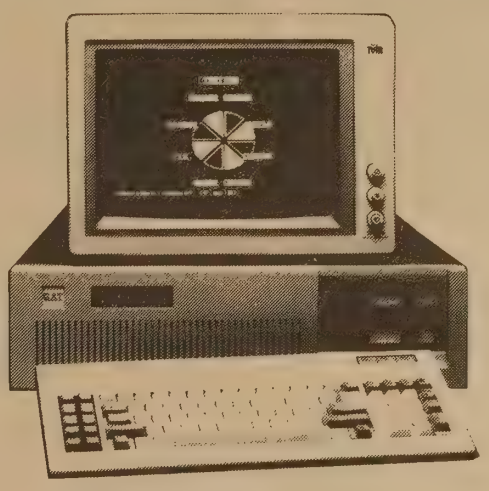

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619

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Sysware BBS. 24 hours, 300/1200 baud, (619) 278-8661. Commodore machines only. Sysop: Don Malette.

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702

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707

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717

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805

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CCCUG BBS. Central Coast Commodore Users Group. (805) 934-2216. 24 hrs/7 days, 300 baud, Punter BBS protocol for downloads. Sysop: Greg Johnson.

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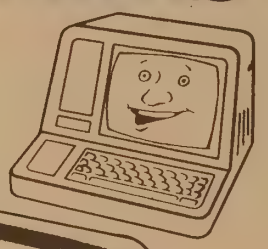

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Atari Resource Magazine (ARM) (818) 446-5813. 24 hrs., 300 / 1200. Currently serving Atari and IBM computer users. Eleven message bases: general chatter, hangouts, advertise, for sale, XE Atari, ST Atari, modem, ul/dl, other BBS #s, Bible, job board. Sysops: Bob and Kim Reynolds.

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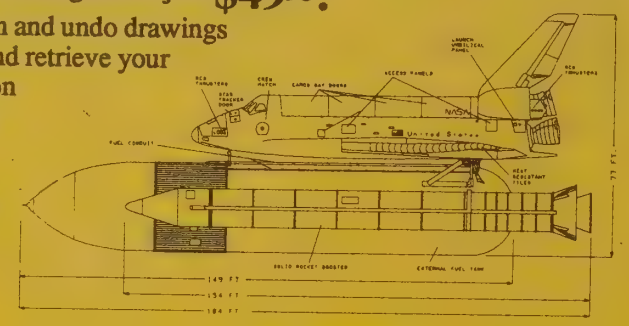

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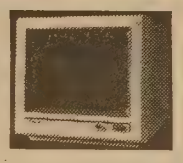

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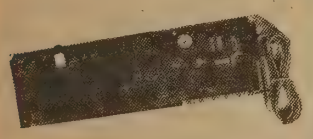

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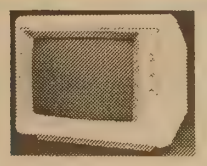

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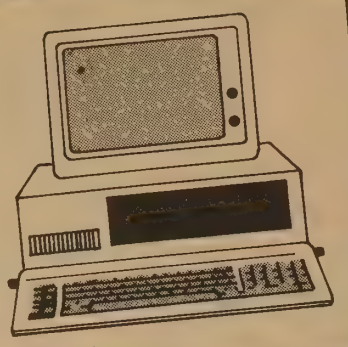

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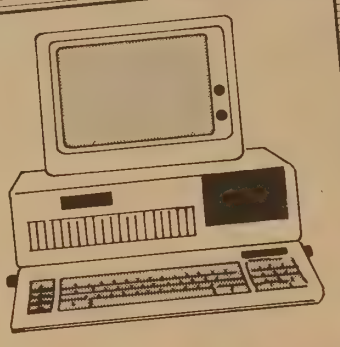

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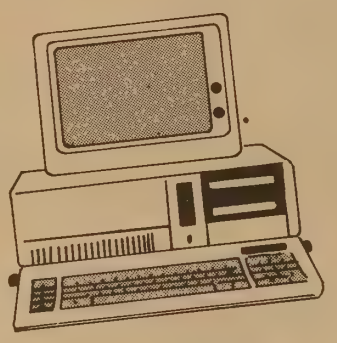

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PLUG (The Plus/4 Users' Group). Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

KAPPA (Memphis Kaypro Users Group). Meetings at 2 pm, 1st Saturday of the month, Room 2, Jennings Hall. Contact Hugh Lamar, 5983 Macon Cove, Memphis, TN. (901) 377-4140.

The AppleWorks Users Group (TAWUG). c/o Regional Rep, 27421 Berenda Way, Hayward, CA 94544, (415) 887-7499.

FORTH Interest Group, International Office. P.O. Box 8231, San Jose, CA 95155. For further information call (408) 277-0668.

Apricot User Group (APRICUG). Box 98, Malverne, NY 11565.

Spellbinder Users' Group has an international newsletter with useful macros written by members, advice on new applications, news, and word-processing problem solving. All experience levels. California members welcome. Write P.O. Box 14, Newark, Notts, England NG24 4TP; telephone (0636) 77313; telecom Gold/Dialcom Mailbox 72: MAG95610.

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National TeleVideo Users Group. Meets 7:30 pm, 3rd Thursday, 1170 Morse Ave., Sunnyvale. P.O. Box 22007, San Francisco, CA 94122. Call for info—David, (415) 753-1552.

Apple Fontrix Club. Monthly newsletter. P.O. Box 29857, Thornton, CO 80229-0857.

ASSOCIATIONS

Community Entrepreneurs Organization (CEO). Business networking group meets in nine chapters around the Bay Area. Share information on tech and non-tech business issues. Topics, brainstorming and a chance to meet others in business. Various week nights. Contact Dr. Crandall, P.O. Box 2781, San Rafael CA 94912, (415) 435-4461. Also new Bulletin Board, (415) 552-9070.

IEEE Computer Societies Committee on Artificial Intelligence and Expert Systems sponsors an open meeting the third Thursday of every month, 7-10 pm, at Foothill College. For more information please call the IEEE council office at (415) 327-6622.

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Computer Professionals For Social Responsibility (East Bay). 902 Rose Ave., Piedmont, CA 94611. Contact Bruce Joffe, (415) 768-0288 days, (415) 654-5263 eves.

FOCUS-MED (Federation of Computer Users in Medicine). Open to all physicians and health professionals. Practice management consultant registry. (415) 626-4600.

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ITRA Independent Technical Representative Association is an organization dedicated to helping people better understand the Personal Computer (IBM). Contact Tim Jones, 870 Market St. #609, San Francisco, CA 94102, (415) 421-4872 for meeting time and date.

MCTUG (formerly Marin County TRS-80 Users' Group). MS-DOS, CP/M and Tandy users group. Meets 7:30 pm on the first Monday of the month at the Larkspur Masonic Lodge, 1122 Magnolia Ave., Larkspur. Contact Dr. Frank Hovell, 907 Sprucewood Court, Petaluma, CA 94952, (707) 762-5740.

PRACSA (Public Remote Access Computer Standards Association) offers to clubs, schools, and user groups a Speakers Bureau. The purpose of the bureau is to act as a resource to these groups in obtaining speakers of high quality for their meetings. The volunteer speaker is provided free to the group. Contact (408) 262-5150. Meetings 4th Wednesday, 7 pm, Vadic Cafeteria, 222 Caspian Dr., Sunnyvale.

San Bruno Computer Core. Meets 7:30 pm alternate Wednesdays. Call (415) 952-9309 for address and info.

San Francisco Computer Society (Formerly the San Francisco First Osborne Group). A society for users of portable computers and/or the CP/M operating system. P.O. Box 783, San Francisco, CA 94101-0783. Meetings on fourth Thursday of the month, St. Aidan's Church, Diamond Heights and Goldmine Dr. in SF. All are invited. Dues $10/yr.

Software Entrepreneurs' Forum, PO Box 61031, Palo Alto, CA 94306. (415) 854-7219.

PATCA (Professional & Technical Consultants Association). 1330 S. Bascom Ave., Suite D, San Jose, CA 95128. (408) 287-8703.

BAYMUG. Bay Area Microprocessor User Group. General computer group, mostly CP/M and S100. All types of interests welcome. Celebrating our 10th year of meetings! Meetings 1441 Rolins Rd., Burlingame, CA, 1st Thursday, 7:30 p.m. Contact Victor K. Bailey, P.O. Box 248, Pleasanton, CA. 94566. (415) 462-4442.

Byte Hum. A user group for computer buffs concerned with human needs, or social activists who want to learn about computers. Let's put all that knowledge to work for social transformation! Sponsored by the Humanist Party. Contact Rick Wall, (415) 495-6555 or (415) 337-2530.

Society for Technical Communication. STC is a professional organization dedicated to furthering the art of technical communication. The San Francisco chapter has about 200 members. Writers, artists and others interested in technical communications are welcome. Meetings 3rd Wednesday of every month, 5:30-7:00 pm; call Sarah Collings, (415) 383-9631 for info.

North Bay Users Group (NBUG). Family computer club devoted to all aspects of computing. Monthly newsletter, library, software demos, etc. Meetings at "CAVE" school, 2nd Tuesday of the month, 7:30-10 pm. Contact Gloria Hutchinson, P.O. Box 7116, Vallejo, CA 94590, or call (707) 644-9327.

Robotics Society of America. Dedicated to disseminating information about robotics, artificial intelligence and machine controls. Mailing address 36 Newell St., San Francisco, CA 94133, (415) 673-2376. San Francisco chapter meets 2nd Monday of the month, 8 pm, Homestead Savings 5757 Geary Blvd. Contact Jim Strope, (415) 552-6564. Berkeley branch meets 6:30 pm, last Wednesday of the month, Claremont Branch, Berkeley Library, Ashby and Benvenue. Contact Soren Knudson, (415) 843-2344. Sunnyvale Pongbotics meets in Sunnyvale on the De Anza College campus, Room 22, first three Wednesdays of the month, 7:30 pm. Contact Bill Lee, (408) 281-2252.

Silicon Valley Computer Society. Meetings 7:30 pm, second Wednesday of the month, Duane and Britton SE corner, Sunnyvale. Contact Dick Verna, (408) 262-2679 for information.

PicoNet. A microcomputer users group. Meets on the second Thursday of each month at 7:30 pm at CMX Corp., 2230 Martin Ave., Santa Clara, CA. Formerly specialized in CP/M software, but has broadened its scope to encompass the entire field of computer-related high technology. Extensive library of CP/M pd software; preparing PC-DOS library. Monthly meetings, periodic newsletter, BBS, C language SIG. Call (408) 374-8090 for recorded message on next meeting's topic.

MicroPsy. Users group devoted to the application of microcomputers in the psychological fields. Meetings first Saturday of the month, noon. Call for information: Martin Schaaf, M.S., (415) 454-6761.

C Group of Northern California. Forming C programmer support group. Group's function will be to exchange information, discuss programming techniques and problems, etc. Anticipate monthly meetings at rotating locations. First meeting to be held 7:30 pm, Tuesday evening, November 4th, in Mill Valley. Call (415) 383-7006, or contact Ben T. Choate III, P.O. Box 1533, Mill Valley, CA 94942.

BADGE-Bay Area Developers Group. Meets third Thursday of every month, 7:30 pm, at Stanford University Building 200, Room 002. Contact Tom Rokicki or Bob Alverson, (415) 326-5312 for information.

California Genealogical Society Computer Interest Group. Meets second Saturday of the month, 300 Brannan St., 4th Floor, San Francisco. Call W.R. Shepard, (415) 989-5441 for information.

Hebrew Users Group., Supporting the use of Hebrew and Hebrew-based languages on computers. Contact Jack Love, (415) 845-7793 (Berkeley Hillel).

USER GROUPS

APL

APLBUG (APL Bay Area Users' Group) has monthly meetings and a newsletter for people interested in APL (A Programming Language). It meets the third Monday of each month at 7:30 pm in the offices of I.P. Sharp Associates, 220 California Avenue, Palo Alto. Annual dues are $15. Contact Curtis Jones, (408) 292-4060, for information.

AT&T

Bay Area AT&T PC6300 Users' Group. Official group supported by AT&T. Meeting time and location vary. Contact Victor A. Borromeo, 764 St. Francis Blvd., Daly City, CA 94015. (415) 477-8124 days, (415) 991-4164 eves/ weekends, or Maurice Aranda, (415) 972-5436 for information. BBS (415) 652-8277, 1200/2400, 8-N-1, 24 hours, 7 days.

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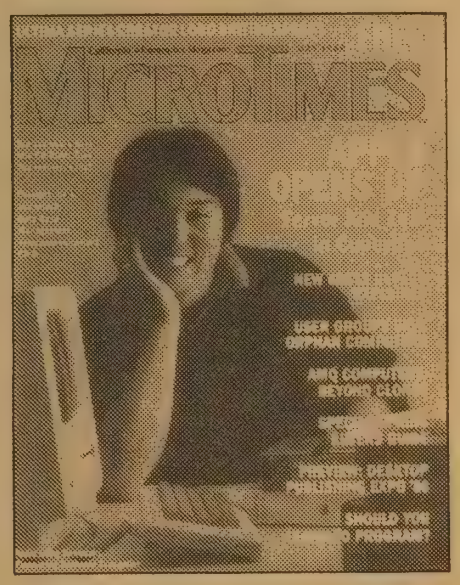

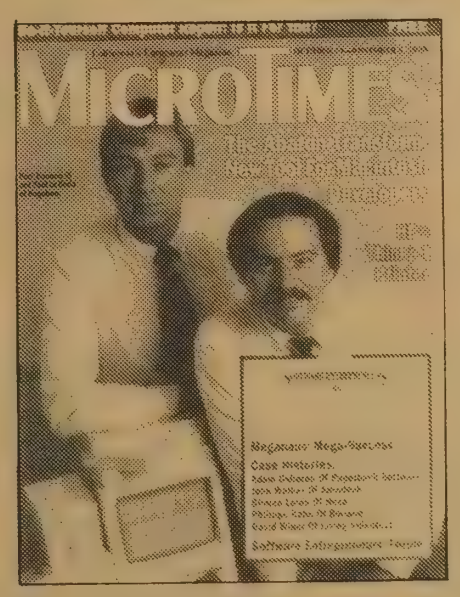

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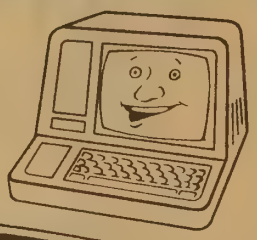

COMPUTER SHOWS & SALES

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E. 10 to N. 215 to Orange Show Exit

Saturday 3/28 - Stockton Computer Show & Sale
Scottish Rite Temple,
33 W. Alpine Way
Off Hwy. 99 Exit Fremont, take Right at
West Ln., Left on Alpine
Off Hwy. 5 Exit March Ln., take right off
Pacific Ave., Left on Alpine

Saturday 4/4 - Santa Rosa Computer Show & Sale
Sonoma County Fairgrounds
Exit Hwy. 12 to Sonoma Exit

Saturday 4/11 - San Francisco Computer Show & Sale
Pacific Center Expo Hall,
22-4th Street at Market
Parking at 4th and Mission

Saturday 4/11 - Ventura Computer Show & Sale
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ACTRIX

ACTRIX Computer Enthusiast Society. Membership ($20/yr) provides public domain software, group rates, discounts for owners of Actrix/Access Matrix microcomputers. Meetings at Sunnyvale Community Center, last Wednesday of the month, 7 pm. Contact K. Edward Lynch, 1405 Phelps Ave. #29, San Jose 95117, (408) 756-5104, for more information.

ADAM

Coleco Adam Users Group. For info send SASE to: CAUG, 2316 Stuart St., Berkeley, CA 94705. Voice (415) 549-3437, data (415) 549-3378.

South Bay ADAM Users' Group. Now forming a users' group exclusively for the ADAM enthusiast in the south bay area. Call Steve for more info at (408) 253-4190.

East Bay ADAM Group. Forming an ADAM users group in the East Bay area. Call Tom for more information — (415) 886-2884, or write 6097 Slopeview Ct., Castro Valley, CA 94552.

AMIGA

First Amiga User Group. We offer demonstrations of software and hardware, a public domain library, and general user help at our monthly meetings, which are held on the first Tuesday of each month in Belmont, CA. Meeting address 1300 Fifth Ave., Belmont, CA, 94070, 7 pm, first Tuesday of the month. Contact Tim Avery/ Kayvan Pejooh, (415) 595-5452.

First Amiga User Group the South Bay. End-users, enthusiasts, developers and programmers all welcome. Meetings 2nd Fridays, library, 40 N. Milpitas Blvd., Milpitas, 7-9 pm. Contact Jim Thomas, P.O. 1863, Fremont, CA 94538, (415) 651-0201. BBS (415) 659-9169.

ACCESS. The Amiga and Commodore Computer EnthusiastS Society (ACCESS) holds its meetings on the 3rd Wednesday of the month in Room 107 of the Chabot Building in Hacienda Business Park, Pleasanton, CA. Contact Skip Perkins, (415) 443-4778 for information.

Sacramento Amiga Computer Club (SACC). Meets the second Wednesday of each month at the Sacramento Municipal Utility District (SMUD) auditorium, 6201 S. St. just off Hwy 50 at the 59th or 65th St. exit, 7 pm. For more information call George Leone, president, at (916) 944-7400 or write to SACC, P.O. Box 19784, Sacramento CA 95819-0784.

Amiga East Bay Info Exchange (AEBIE). P.O. Box 485, Pinole, CA 94564. For end users in the West County, North and/or East Bay area.

AD-Amiga Developers Group. Meets the last Monday of each month at 6 pm, 2618 Telegraph Ave., Berkeley, (415) 845-4814.

AEBUG-Amiga East Bay User Group. The Original Users Group meets the second Wednesday of each month at 2618 Telegraph Ave., Berkeley, 7 pm. (415) 845-4814 for information; BBS (415) 845-4812.

AUGment, the Amiga User's Group of Silicon Valley. P.O. Box 1863, Fremont, CA 94538-0186. Contact: Jim Thomas. Information line: (415) 651-1160. BBS: (415) 659-9169. Meetings every second Friday at Hewlett-Packard, 5301 Stevens Creek Blvd., Cupertino.

APPLE

San Francisco Apple Core Special Interest Groups, BBS, large public domain software collection, seminars, newsletter, group buys of hardware / software, help network. Meetings: (Apple) Daly City library, 3rd or 4th Saturday of each month, 40 Wembley near Gellert (Hickey exit), 10 am, call 433-7170 for carpool info. East Bay meeting, Concord library, 2618 Telegraph Ave, 1st Tuesday each month, 7 pm. Call 845-4810 for info. Mac Meetings: 3rd or 4th Saturday, Daly City Library, noon. Call 433-7170 for info; also Concord library, 3rd Saturday, 10 am, call 427-4821 for directions. Info: SF Apple Core, 1515 Sloat Blvd., Suite 2, San Francisco, CA 94132. (415) 566-2342 (voice), (415) 474-8608 (BBS/modem).

The AppleWorks Users Group. c/o TAWUG Regional Rep., 27421 Berenda Way, Hayward, CA 94544.

SPCA (Society For The Prevention of Cruelty To Apples) Apple user/interest group. Features: Monthly meeting with newsletter, raffle and door prize hard / software, demonstrations, lectures, discussions, $20 per year, pro-rated after June. Meetings last Wednesday of month, 7:30 pm. Contact Paul Meyerholtz for info (415) 490-8209.

Association of Apple 32 Users Macintosh, Lisa. An association of "knowledge workers" who wish to share information on products, applications, and events. User-developed, non-copyrighted software, SIGS, newsletter. P.O. Box 634, Santa Clara, CA 95052.

San Leandro Apple Eaters Users Group. Apple II users group meets the first Thursday of each month at San Leandro High School (room 213). New owners to experienced users welcome: Appleworks, education, hardware/software, telecommunications. Call Open Campus BBS area 11 (415-895-0135) or voice (415-782-9250) for more information.

Pen-Apple (Peninsula Apple Users Group) Meetings 2nd Thursday each month at 7:30 pm, Ampex Corporation cafeteria, 421 Broadway, Redwood City. Contact Pierre Testart, (415) 952-9309.

Diablo Valley Apple Users. Apple II family users and Macintosh users. Special Interest Groups meet monthly. Featuring a library of public domain software collection and our own Club's DOM's, monthly newsletter, group buys of hardware and software as well as monthly demos of new products. Meetings held on 1st and 3rd Friday each month at 7 pm at the Willow Creek Center, 1026 Mohr Lane in Concord. Contact Merle Zmak, president, P.O. Box 5031 Concord, CA 94524, or call (415) 672-7596 for additional information.

South Peninsula Apple Computer Enthusiasts (c/o David Harris, P.O. Box 1257, Palo Alto, CA 94302) meets near the Varian Credit Union, Bldg. 4C, 611 Hansen Way, Palo Alto, at 7:30 pm on the first Tuesday of every month to exchange information about available hardware, software, events, publications, and methods on Apples, and to encourage collaboration on projects. Call (415) 856-9126 answering machine takes 30-second messages.

Roseville Apple Core. Discover your Apple's Core! We meet twice each month at the Roseville Public Library with additional SIG meetings for AppleWorks, BASIC and TelCom. We also feature a monthly bulletin, large public domain library, and new member's disk, all for just $12 yearly membership. C'mon out and bring a friend. Contact Dave Smart, P.O. Box 1377, Roseville. (916) 961-2249.

Apple Sac. (Sacramento) Meetings on first Wednesday and third Tuesday every month at Madison School, 5241 Harrison St. (corner Harrison and Madison Ave. 1/4 mile west of 180 on Madison Ave.), 7:30 pm. Contact Ray Beam, president, P.O. Box 254645, Sacramento, CA 95825, (916) 448-6115 for more information.

Stanislaus Apple Group. You're invited! Stanislaus Apple Group meets 2nd Tuesday each month, 7 pm, Room 124 Ag Bldg, Modesto JC, main campus. We support Apple II and compatibles, Apple III, Mac, Lisa. Newsletter, BBS (209-529-3202), extensive PD software library. More info call (209) 523-7289 (eves).

Santa Cruz Apple User's Group meets at Cabrillo College, Aptos, ILC building, 1:30 pm, second Sunday of the month. For information contact Tim Ruckle, president, (408) 462-3154.

Apple Gardens. New Apple II users group. Share info, programs, group purchases. Brand name disk, new products, software demos and evaluations. Call Tom Turley at (415) 468-4045.

Apple P.I.E. Meets at Lynbrook High School, Room 30, 1280 Johnson Ave., San Jose, 4th Thursdays, 7:30 pm. Contact George Ingalls, P.O. Box 2185, Santa Clara, CA 95055.

ATUNC-Apple Three Users of Northern California. Explanations, demos, large public domain library. Mailing address: 220 Redwood Highway 184, Mill Valley, CA 94941. On Apex and Draconet BBSs.

Apple East Bay Users meets the last Tuesday of each month at 2618 Telegraph Avenue, Berkeley, at 7 pm. (415) 845-4814 for information; BBS (415) 845-4812.

Apple Pickers of Sonoma County. Meets second Saturday of each month, 1735 Shuhaw Hall, SRJC, 1 pm. Call for sample newsletter: Mary Lou Mayes, (707) 763-8322.

ASHTON-TATE

Framework/Editor Bay Area Users Group (FREDBUG) Purpose of the group is to share programming and applications techniques under FRAMEWORK for the business and technical professional. Call for info: Rudi Wiedemann, (408) 730-4159.

San Francisco dBase User Group For advanced users and programmers. Meets once per month. Membership required for attendance. Contact Frank A. De Coster, 1100 Gough St., San Francisco, CA 94109, (415) 474-6693.

East Bay dBASE Users Group. Meets 3rd Sunday, 1 pm. Call Darrell Bross (415)873-7522 or Alexandra Saur (415)893-7637 for meeting address.

dBase II/III SIG of SF PC Users Group meets third Monday of each month, 7-8 pm, Fort Mason, San Francisco. Contact Ron Freshman, (415) 459-6613.

DBDVLPRS (dBaseIII Program Developers). Call for information on meeting time and location: Gil Orlik, (415) 931-0377, 2240 Buchanan St., SF 94115.

ATARI

ABACUS (Atari Bay Area Computer Users Society) All ATARI users or prospective users are welcome. Membership ($15/year) provides public domain software, low cost blank disks, monthly newsletter, group prices on hardware and software, help from experts, low cost classes for beginners. Meetings first Saturday of the month, Fort Mason, SF, Room 300, Bldg. C, 10 am-2 pm. Contact Bill Zinn, P.O. Box 1823, Mill Valley, CA 94941. (415) 753-8483.

A.C.M.E. (Atari Computer Marin Enthusiasts) Meets monthly in Marin, third Thursday evening monthly from 7 pm on. Gallinas School, 177 N. San Pedro Rd., San Rafael. Contact Bruce Frank, (415) 435-6020, P.O. Box 222, Tiburon, CA 94920.

Diablo Valley Atari Computer Enthusiasts (D.A.C.E.) Contact Mike Randis, 3602 Dumbarton St., Concord, CA 94519, (415) 798-6565.

Bay Area Atari Users Group We have a 24-hour 300/1200 baud BBS at (408) 249-7722. Meetings at Bracher School Cafeteria, corner of Bowers and Chromite, Santa Clara, CA, first Monday of the month. Contact Frank Nagle, P.O. Box 50459, Palo Alto, CA 94303, (415) 791-5461 for more info.

San Leandro Computer Club Although open to all computer users, this group is primarily oriented to Atari computer owners. Our club is considered one of the best in the country, worthy of consideration by both novices and experts. Meetings 1st Tuesday of the month at San Leandro Community Library, 300 Estudillo Ave., San Leandro, CA. Contact Phil Mitchell, P.O. Box 1525, San Leandro, CA 94577-0152 for more info, or call (415) 351-2208.

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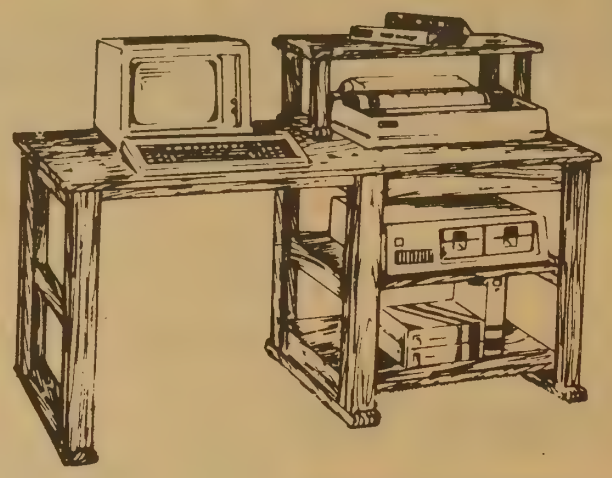

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COAST User Group (California Original Atari ST). Public domain disks, MIDI, support, help for the Atari ST line of computers. Advice and programs not to miss. Meetings at Clorox Building, 1221 Broadway, Oakland, CA, 3rd Wednesday each month, 7-10 pm. EaST COAST meets 2nd Tuesday of the month at 1015 Esther Drive, Pleasant Hill, 7:30 pm. Members only. Dues $24.00 yr. Contact Chuck Thorp, president, 1015 Esther Drive, Pleasant Hill, CA 94523, (415) 945-1949 for information.

Redwood Atari Group (R.A.G.) Meets 4th Saturday, 1-4 pm, at Coddingtown Meeting Room, 1100-B Coddingtown Center, Santa Rosa. Contact Mikkel Lawrence, (707)585-3949, 21 Creekwood Sq., Rohnert Park 94928.

ATTACHE

Attache UNL Otrona may be dead, but the Attache Users News Letter Lives ON!! Contact Jim Ayers, 301 Poplar St., Mill Valley, CA 94941. (415) 388-4805. Meetings 7:30 pm, 2nd Wednesday.

First Attache User Group News. Support, news, and co-operation for users of Otrona Attache and 2001 portable computers. Since '82. Contact Charles Raisch, 1827 Haight St. Suite 16, San Francisco, Ca 94117, (415) 221-3415.

AUTOCAD

AutoCAD Users Group. Call Gen Katz (415) 530-8870 for information about future meetings.

AutoCAD User Group. Call Volker Ackermann, (415) 485-0958 for information.

AutoCAD Users Group of Santa Cruz. Meetings held at Citicorp conference room, 806 Ocean Street, Santa Cruz, 7-9 pm, 1st and 3rd Tuesday of the month. Call (408) 462-0448 for information.

BASIS

Bay BUG Basis 108 Users meet every first Friday of the month at College of Alameda Computer Room, 7:30 pm. Contact Roger Bernhardt, 536 Mission, San Francisco or call (415) 221-0262 for more information.

BONDWELL

Bondwell Users Unite! Trying to start group, need your help. All levels welcome. Meeting address 405 Stierlin Rd. #17, Mountain View. Time and date to be announced. Call Tom Gatlin at (415) 961-0450 for more information.

BPI

Bay Area BPI Users Group meets the fourth Tuesday of each month. For more information contact Mitch Paioff, 5097 Tisdale Way, San Jose, CA 95130, (408) 866-4310.

CANNON

Cannon AS 100. Anyone who owns a Cannon AS-100 computer and is interested in forming a group to share problems and solutions write HTP-4111 Hilltop, Vacaville, CA 95688.

CASIO

Casio Research Project. Discussion and collaboration; creation of plug-in expansion board using VLSI chip. Share programs. Meetings TBA. Contact Julius M. Zebrowski, (415) 969-9458.

COMMODORE

San Francisco Commodore Users Group PD library, classes, in-depth demonstrations, eprom programmer, BBS-ET (415) 861-4485. Meeting time and place--call for details: Malcolm Lowe, (415) 832-1539.

Diablo Valley Commodore Users Group Meetings Contra Costa Water District Auditorium, 1331 Concord Ave., Concord, CA, second Thursday of month at 7:30 pm. Write DVCUG, P.O. Box 27155, Concord, CA 94527, or call (415) 838-2838 for more info.

Napa Valley Commodore Computer Club Meets first and third Mondays, 7:30 pm, at Northwood Elementary School, 2214 Berk St., Napa. Take Redwood Road to Dover St. to Berk St. Contact President Dick Bull (707) 257-3773 or vice-president Roger Pruym (707) 253-1690 for more info.

Lake County Commodore Users Group Contact Al Reuss, P.O. Box 388, Clearlake, CA 95422.

Marin Commodore Club Meets at Redwood High School, Corte Madera. Visitors welcome. Contact Elmer Johnson for information: 665 Las Colindas, San Rafael, (415) 479-0426.

Peninsula Commodore User Group Public domain library, demonstrations, user help, newsletter. Membership is $25 per year. Non-members pay $2 at door. Meetings are 3rd Tuesday of each month. Meeting place is the Church of the Good Shepherd Hall, 1300 5th Ave., Belmont (across from city hall). For more info call (415) 595-5452 between 9 am and 6 pm, or call our BBS at the same number after 6 pm.

The Commodore Connection. Meetings at Homestead Savings, 1411 A St., Antioch, 3rd Monday of the month, 7:30 pm.. Contact Nita Hoops, Secretary: (415) 754-9054. BBS: (415) 458-1005, Commodore only, 24 hours, 300/1200.

Commodore User's Group of Hayward. The CUG of Hayward meets the first Saturday of each month from 3 to 5 pm at the Commodore Computer Center located at 22521 2nd St., Hayward. Call (415) 886-1916 evenings between 5 - 8 pm or (415) 537-1323 days between 10 am and 5 pm.

NBUG (North Bay Users Group). Contact Jim Stephens, president, 124 Delgado St., Vallejo, CA 94591, or write P.O. Box 7116, Vallejo, CA 94590.

Santa Rosa Commodore Users Group. Walter Saures, President, 333 East Robles Ave., Santa Rosa, CA 95407-7921. (707) 584-7009. Information line, (707) 526-6464 SRCUG-BBS.

Family Roots Searchers. Using Commodore SX-64 computer, Dynax DX-15, PractCalc II, Word Pro 3 Plus, Family Tree. Meetings by appointment only. Vera Ross, Atchison Village, Richmond, CA 94801-2942, (415) 235-8716.

PLUG (The Plus/4 Users' Group). Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

Silicon Valley Commodore Computer Club. Meets 4th Wednesdays, H.P., 5301 Stevens Creek Blvd. at Lawrence, 7 pm. Contact Roger Weiss, (408) 942-2442.

ACCESS. The Amiga and Commodore Computer EnthusiastS Society (ACCESS) holds its meetings on the 3rd Wednesday of the month in Room 107 of the Chabot Building in Hacienda Business Park, Pleasanton, CA. Contact Skip Perkins, (415) 443-4778 for information.

C.O.W. Commodore Owners Workshop. Meets at the San Bruno Rec Center (in San Bruno Park) the third Thursday of every month from 7-10 pm. Machines welcome. We have a huge PD library that users can check out. We usually have demos each meeting; we have BASIC programming classes and help each other along. For further information call the San Bruno Parks and Rec at (415) 588-1201.

Fairfield Commodore User Group. Meetings Solano County Education Bldg., 1st and 3rd Mondays. Contact Ben Harris, 1182 Dana Dr. Fairfield 94533, (707) 422-1669.

FUNHUG — Fremont, Union City, Newark, Hayward Users Group. For users of Commodore 64, 128, and Amiga computers. We have software/hardware reviews and demos, plus open discussion time. We have over 90 disks in our library. Bring $2 to help pay for the meeting place. Group meets every third Wednesday at 7:45 at 5445 Central Ave., Newark. For more info and a map send SASE to Russ Fisher, 36015 Pizarro Dr., Fremont, CA 94536.

64/MORE. Commodore User Group. P.O. Box 26811, San Jose, CA 95159. BBS (408) 225-2295, 300 baud, punter protocol, 24 hours. Sysop: Steve Nichols.

COMPAQ

SF Compaq Users Group is now a SIG of the SF IBM PC Users Group. For information please call D. Blow at (415) 221-2764.

COMPUPRO

Bout Time, By God CompuPro user group forming in San Francisco. Call (415) 665-4733 or write to Barry Hermanson, 1509 5th Ave., San Francisco, CA 94122 for information.

CROMEMCO

Silicon Valley Cromemco Users Meets 3rd Tuesday of the month at MCM Enterprises. 215 Hamilton Avenue, Palo Alto, CA. Call Emily Ott at (415) 854-5818 for details.

DATAFLEX

Dataflex User Group. For more information call Alex at (415) 433-7944.

DYNABYTE

Dynabyte Announcing M.A.D., Mutual Assistance, Dynabyters (Dinosaurians?) For owners of this orphan Z80 S100 machine. Call Woody McPheeters, (415) 548-3126 or write 3128 King St., Berkeley, CA 94703.

EAGLE

Eagle Computer Users Group. P.O. Box 3381, Saratoga, CA 95070, (408) 972-1965. General meetings are held on the second Saturday of the month at Mercury Savings, 350 Showers Drive, Mountain View (San Antonio Center) from 9:30 am to noon.

Screaming Eagles User Group For 8 and 16 bit Eagles. Quarterly newsletter, public domain disk. On CompuServe (CLUB) Sec. 3. $10/year individual, $20/year business. 101 Parnassus #1, San Francisco, CA 94117. (Voice) (415) 661-4362.

Eagle Computer Users Group —ECUG. Meets 2nd Mondays, 7 pm, 6132—66th Ave. (Southgate Library), Sacramento. Contact W. Jud Boies, P.O. Box 163506, Sacramento, CA 95816, (916) 443-1060.

ENABLE

ENABLE Users' Group. Supporting users of Enable, the integrated software package. Monthly meetings in San Francisco (contact Evan Christensen, 415/469-1863) and Walnut Creek (contact Sandi Baker, 415/944-0426). "Enabling" is a bimonthly newsletter for all users of the software. Write for free sample: Enabling, 591 Redwood Highway, Suite 3210, Mill Valley, CA 94941.

EPSON

Bay Area Epson Salts 125 Del Centro, Millbrae, CA 94030, (415) 697-0567.

Epson Users of San Francisco Bay Area Epson group has nationally circulated newsletter Valnews: 400 members mostly QX-10 owners, growing software library. Meetings focus on mutual support. Mainly Valdocs and other applications. Meetings first Thursdays. 7 p.m. Fort Mason Center, Bldg. C, Room 205, San Francisco. Contact Alan Magary, 904 Irving St., Suite 271, San Francisco CA 94122, (415) 661-9270.

Napa Valley Epson Users Group 1307 Hestia Way, Napa, CA 94558, (707) 253-8727.

FORTH

FORTH Interest Group, Berkeley Chapter. Meets 2nd Saturday of the month at 1 pm, 10 Evans Hall, UC Berkeley. Contact Mike Perry, (415) 644-3421.

FORTH Interest Group, Monterey/Salinas Chapter. Contact Bud Devins, (408) 633-3253.

FORTH Interest Group, Sacramento Chapter. Meets 2nd Tuesday of the month, 7 pm,

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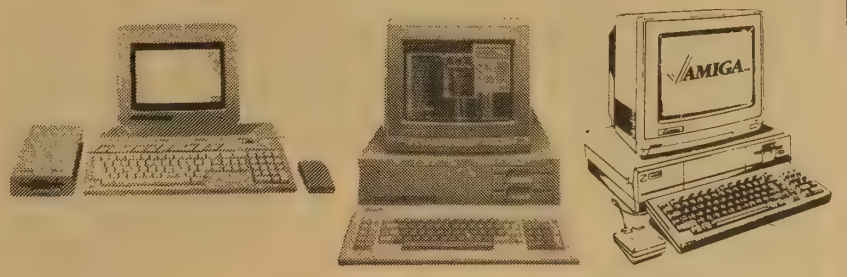

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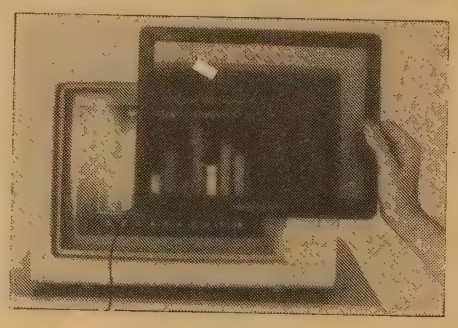

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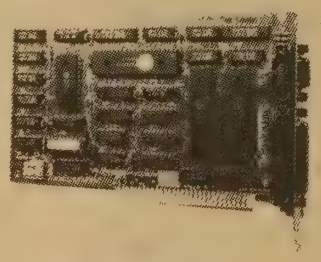

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FORTH Interest Group, Bay Area Chapter. Meets 4th Saturday of the month, 10 am advanced, 1 pm beginning, at ABC Christian School Auditorium, Dartmouth and San Carlos Ave., San Carlos (408) 277-0668.

FORTH Interest Group, Stockton chapter. Contact Doug Dillon (209) 931-2448.

GAVILAN

Gavilan User Group. Meets 2nd Thursday, 7 pm, Lockheed Bldg 162. Contact R.W. Brown, 780 Manx Ave., Campbell, CA, (408) 379-2774. Gavilan BBS (408) 374-3974, 300/1200, 24 hours, free.

HEATHKIT

San Jose Heathkit Users Group. Meets first Wednesday at 7 pm at the Heathkit store on South Bascom Ave. in Campbell.

B.A.H.U.G. Heath/Zenith computers, CP/M and MS-DOS. Meetings at 2001 Middlefield Rd., Redwood City, CA, 7 pm, 2nd Thursday. Contact John Lindquist, 642 Hollenbeck Ave. #1, Sunnyvale, CA 94087.

NBHZUG North Bay Heath/Zenith Users Group. Devoted to Heath/Zenith computers in specific and MS-DOS, CP/M computers in general. Beginners and advanced. Meeting place varies, time 2nd Saturday, noon. Contact Martin Schaaf, (415) 454-6761 for information.

HEWLETT-PACKARD

HP Portable People user group to be formed. Contact Michael Felsenstein, 2366 40th Ave., San Francisco, CA 94116, (415) 564-8279.

INTEREX is the International Association of Hewlett-Packard Computer Users, with affiliated users worldwide approaching 10,000. Acting as an information resource for users of HP computers (HP3000, 1000, 900 and Series 100), INTEREX maintains libraries of user contributed software. The software is available through the CSL membership categories. INTEREX has three publications, one or two for each of the categories. Phone (408) 738-4848 or write User Services Department, 680 Almanor Ave., Sunnyvale, CA 94086.

IBM

South County PC Users Group Meetings held second Thursday of each month, at Software Center, 22406 Foothill Blvd., Hayward, CA. Public Domain club disks, newsletter and help on MS-DOS problems. Contact Debra Taylor, P.O. Box 7656, Fremont CA 94537-7656 for more info, or call (415) 276-5111.

Silicon Valley Computer Society. New users SIG, 7:30 pm, 2nd Wednesday; call Dick Meyer, (408) 723-0159. dBASE III SIG, 7:30 pm, 4th Thursday; call Thaine and Barbara Anderson, (415) 345-0152. WordPerfect SIG 7:30 pm, date variable; call Martin Van Derpool, (408) 238-8434. Software tools and graphics SIG, 7:30 pm, 4th Tuesdays; call Hal Sampson, (408) 866-7833. Artificial Intelligence SIG, 7:30 pm, 2nd Thursdays; call Kent Byron, (415) 656-0410. Telecom SIG, 7:30 pm, 1st Monday; call Scott Sawicki, (408) 243-8781. Lotus 1-2-3/Symphony SIG, 7:30 pm, 3rd Thursday; call Bill Welch, (408) 247-3405. C programming SIG, 7 pm, 3rd Tuesday; call Fletcher Johnson, (408) 946-0960.

California PC LAN Users Group, 1625 The Alameda, Suite 511, San Jose, CA 95126. (408) 289-1711.

Diablo Valley PC. An IBM PC User Group, monthly meetings, newsletter and public domain software library. Contact Jim McDonnel, president, 2261 North Main St. 117, Walnut Creek, CA 94596, (415) 933-1270.

The Bay Area Computer Society Emphasis on IBM PCs, networking and multi-user systems. P.O. Box 20583, Oakland, CA 94604, (415) 839-5786.

IBM PC Users Group of the Redwoods. Anyone interested in PCs and/or compatibles is welcome. Meetings at Yulupa School, 2250 Mesquite Dr., Santa Rosa, CA, 4th Thursday of the month, 7 pm. Contact Michael Adams, P.O. Box 5055, Santa Rosa, CA 95402, (707) 664-8320, (707) 546-3619.

Sacramento PC Users Group. Over 1000 members. Meetings at Holiday Inn Holidome, 5321 Date Ave., 7 pm, 3rd Wednesday. Contact Barney McCauley, P.O. Box 685, Citrus Heights, CA 95610, (916) 484-1048, or call the club number (916) 332-1944.

SF PC jr User Group meets monthly. Lectures and discussions on the usage of IBM PC jr software and hardware. Software and books library. For more information please send SASE to 2336 Market St., Suite 20, San Francisco, CA 94114. Meetings at 1550 Bay St., SF, every first Sunday at 7:30 pm.

San Francisco PC Users Group. Largest SF group focusing on IBM and compatibles. Over 150 disks of public domain software, excellent monthly newsletter. 800+ members, $30 yr. Write 3145 Geary Box 155, San Francisco, CA 94118. Meetings 8 pm, 3rd Mondays, Bldg A Fort Mason.

Monterey Bay PCjr Users Group. Meets at Legacy Computers, 431 Tyler, Monterey, CA 93940. Usually meets second Thursday of the month. Contact Lloyd Reece, (408) 899-5795. Mail to Box 1191, Seaside, CA 93955.

Valley PC Users Group. Individuals and corporate users of the IBM PC and compatibles; guest speakers from major vendors, public domain software, exchange problems and solutions. BBS 24 hours (209) 952-5021. Meeting address 731 Brookside Road, UOP School of Pharmacy, Rotunda Bldg., Stockton, 7 pm, 1st Tuesday. Contact Francis Pillow, P.O. Box 77748, Stockton, CA 95207, (209) 478-9697.

FUNHUG PC—Fremont, Union City, Newark, Hayward User Group. For recreational/home users of IBM PC and compatibles. We meet on the third Wednesday of each month at 5445 Central Ave., Suite 1, Newark, at 7:45 pm. We have software/hardware reviews and visits from manufacturers. Our library contains over 250 disks of public domain software. Bring $2 to help pay for meeting place. For more info send SASE to Russ Fisher, 36015 Pizarro Dr., Fremont, CA 94536.

Marin-Sonoma PC Users Group. Meets last Tuesday of the month, 7:30 pm, in the Whistlestop building, 930 Tamalpais St., San Rafael, CA. Park in Savings and Loan parking lot across the street. Classes, SIGs, 24 hour BBS at 415/927-1216. Emphasis on business applications and solutions. For additional information contact John Hawkins (415) 525-8500, P.O. Box 6476, San Rafael, CA 94903.

Santa Cruz Computer Society. An IBM PC and compatible for beginning to advanced users, programmers and decision makers. Meetings 3rd Thursday, 7 pm, 1555 Soquel Dr., Santa Cruz (Dominican Education Center). Call Daniel Payne, (408) 476-0203.

San Francisco Computer Society, a CP/M and MS-DOS user group, meets on the fourth Tuesday of each month at St. Aidan's Episcopal Church, Diamond Heights Blvd. and Goldmine Drive in San Francisco, 7 pm. Membership is free, meetings are free and open to members and non-members. Member of FOG. For more information call Ralph Gallagher at (415) 929-0252 or Mark Simpson at (415) 479-6290.

IBM Compatible User Group of Silicon Valley. Meets monthly to share information about IBM compatible or clone computers. BBS (408)287-8326, 300/1200, 5:30 pm-7:30 am M-F, 24 hours weekends. Call (408) 287-8325 for information, or write to 1515 The Alameda, Suite 303, San Jose, CA 95126.

CP/MUSC, A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: P.O. Box 628, Ben Lomond, CA 95005, (408) 338-6365, (408) 476-0504.

KAYPRO

BAKUP (Bay Area Kaypro Users and Programmers). One of largest Kaypro user groups in country. Meet 3rd Tuesday of month, 7:30 pm. We support our RBBS/RCPM for members, publish a monthly newsletter, have a 40 volume software library, and a lot of fellow KP'ers! Write for info, $10 per year to join: Membership Coordinator, P.O. Box 20181, Oakland, CA 94620.

KAYFUN Peninsula Kaypro Users Group meets second Thursday of every month at 7:30 pm in the ground floor social room, 222 Laurel St., San Carlos. Bimonthly newsletter, public domain software library, and publication library. Membership $12 per year. Every third meeting a Free Forum night dedicated to individual help. Contact Larry Welling, 222 Laurel St. #310, San Carlos, CA 94070, (415) 593-9981.

South Bay Kaypro Users Group (SBKUG). Meetings at 10400 Torre Ave., Cupertino. We have an extensive library of public domain software, including over 200 diskettes of the SIG/M library. The floor is open for questions at each meeting, and we welcome new members at all levels of ability. Bring your machine, or at least your diskettes. For meeting night call Chuck Hansen at (408) 257-5244, or write P.O. Box 390088, Mountain View, CA 94039-0088.

HAYPROS. Kaypro User's Group - informal format, dealer supported. Meets at Computer Insights, 40957 Grimmer Blvd., Fremont, CA 94538, 1st Tuesday each month. Contact Ted de Castro, 18841 Vineyard Rd., Castro Valley, CA, (415) 581-8882.

CP/MUSC, A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: P.O. Box 628, Ben Lomond, CA 95005, (408) 338-6365, (408) 476-0504.

San Francisco Computer Society, a CP/M and MS-DOS user group, meets on the fourth Tuesday of each month at St. Aidan's Episcopal Church, Diamond Heights Blvd. and Goldmine Drive in San Francisco, 7 pm. Membership is free, meetings are free and open to members and non-members. Member of FOG. For more information call Ralph Gallagher at (415) 929-0252 or Mark Simpson at (415) 479-6290.

Silicon Valley FOG. Supporting all types of CP/M micros. Two meetings monthly, one at the Campbell Public Library, 70 North Central Ave., Campbell, and the other at the Saratoga Community Library, 13650 Saratoga Ave., on the southeast corner of Saratoga and Fruitvale Avenues, Saratoga. Call (408) 371-8699 for further information.

LEADING EDGE

Bay Area Leading Edge User Group. Interested in starting a Leading Edge User Group? Write to Jim Williams, 26765 Calaroga Ave., Hayward, CA 94545.

MACINTOSH

EBMUG (East Bay Macintosh User's Group) Friendly, informal. Public domain software and computer book library. Information exchange. Speakers. Product discounts. Free admission. Meets at West Berkeley Public Library, 1125 University Ave., Berkeley, CA, third Tuesday of each month at 7:30 pm. Contact Shep Tamler, (415) 621-8808. Mailing address P.O. Box 7816, Berkeley, CA 94707-0816.

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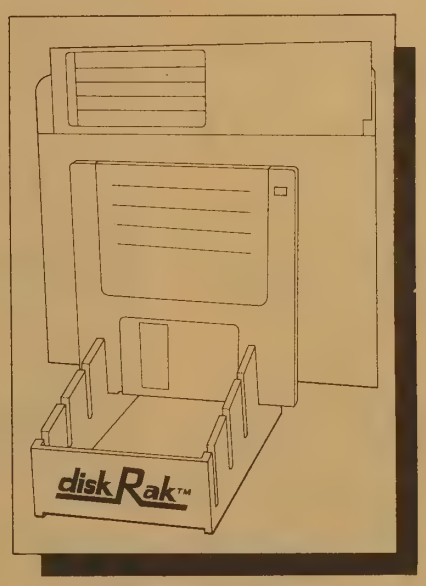

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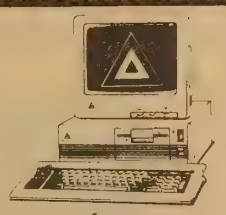

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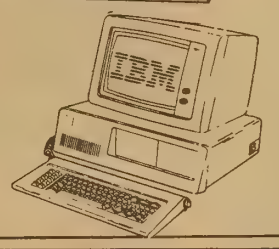

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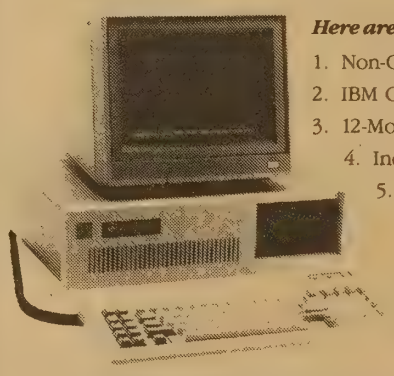

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Bay Area MacForum New and experienced Macintosh users. 2 monthly meetings: one immediately following San Francisco Apple Core meeting at Religious Activities Center, Bldg. 689, in the Presidio, San Francisco, 3rd Saturday of the month; one at Software Center, The Willows Shopping Center in Concord, second Monday of the month, 7 pm - 9 pm. For info: 1515 Sloat Blvd. #2, San Francisco, CA 94132, (415) 566-2342.

Berkeley Macintosh User Group (BMUG). 1442A Walnut St., #153, Berkeley, CA 94709. Free meetings on campus (UCB). General meetings: every Thursday 6 pm, Physical Sciences Lecture Hall. Beginners: 6 pm Tuesdays, 230 Wheeler. Developers: 6 pm Wednesdays, 30 Wheeler. Call the office for this week's topic. Reese Jones, (415) 849-9114. BBS (415) 849-BMUG.

MacNexus. Sacramento's Macintosh User Group. 150 members, but still informal. Extensive public domain collection. Contact Gail McGovern, P.O. Box 163058, Sacramento, CA 95816, (916) 446-2411. Meetings 3rd Thursdays, 6:30 pm, Almond Plaza, 17th & C, Sacramento.

MacProgram Unlimited. Meets monthly. Informal with hands-on testing of different programs. Public domain and standard programs in rental library. Meets Albany YWCA, Kains and Solano, Saturday 9:30 am. Contact William Gong, P.O. Box 7704, Berkeley, CA 94707. (415) 527-1756.

Stanford Macintosh Users Group (SMUG) meets on the first Monday of the month at 7 pm in Kresge Auditorium, Stanford Campus. Meetings include speakers, discussions, answers and sale of library disks and other SMUG items. The Excel, Novice, Developer's, Japanese Word Processing Groups each meet twice monthly. SMUG publishes a newsletter and runs a BBS. Call the SMUG hotline at (415) 723-SMUK for a listing of current events. Stanford Macintosh Users Group, P.O. Box 2354, Stanford, CA 94305-0135.

Club Mac of Monterey. Macintosh User Group of Monterey Bay Area. Membership with monthly newsletter $25. Meetings 7 pm, last Wednesday of the month, Santa Catalina School, Monterey. Contact Richard Ware, P.O. Box 222988, Carmel, CA 93922.

Macs Of Marin. Macintosh users of Marin County. Emphasis on education of Mac users. Meetings: Room 104, Science Building, College of Marin, 2nd Thursday of each month, 7:30 pm. Contact Steve Salzman, (415) 459-5707.

maCruzers, a Macintosh user's group, meets every second Wednesday of the month at Louden Nelson Recreation Center in Santa Cruz, 7 pm. For information call (408) 459-1644 or leave mail on The WELL (415-332-6106) for Paul Foraker [sforaker]. Wood Ring BBS (408) 423-7205, 18 hrs/day, several megs of shareware/pd utilities and games; making the effort to have the latest version of important DAs and utilities.

Association of Apple 32 Users. Meetings at GTE in Mountain View, 2nd Saturday of the month. Contact Ken Silverman, P.O. Box 634, Santa Clara, CA 95052, (408) 263-0398.

MICROMATE

East Bay Micro-Mate Users' Group. CP/M (3.0) public domain software available. Meetings at 757 Longridge Rd., Oakland, 1st Thursday of each month. Contact Ed Miler, P.O.B. 402, Moraga, CA, 94556, or call (415) 376-1611 for info.

MIDI

MIDI Applications Group. Meets first Saturdays of the month. Contact John Komlenic, 1411 10th Ave., Oakland, CA 94606, (415) 465-6216.

MINDSET

First Mindset Users Group Monthly meetings and newsletters cover advanced topics in computer graphics, animation, and video production using the Mindset Personal Computer and accessories. Meetings at various Bay Area locations, 3rd Monday of the month, 7 p.m. Contact Tim Negris, 138 Village Ct. #6, Walnut Creek, CA 94596, or call (415) 934-1448.

MORROW

BAMDUA (Bay Area Micro Decision Users Association). Meets on last Tuesday of the month, 7:30 pm. Call (415) 644-2805 for location. Monthly newsletter.

SMUG (Stanford Morrow Users Group). Meets 2nd Wednesday of each month at 7 pm on Stanford Campus, Shultz Auditorium, Health Research and Policy building, Campus and Lomita Drive. Other CP/M users welcome. For further information call Ross E. Voyles, (408) 243-1455.

CP/MUSC, A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: P.O. Box 628, Ben Lomond, CA 95005, (408) 338-6365, (408) 476-0504.

PETMUG — Petaluma Morrow Users Group. Meets Westamerica Bank, Washington Square, Petaluma, 7:30 pm, 4th Thursday of the month. Contact Frank Nance, president, 293 Circulo Puebla, Rohnert Park, CA, (707) 585-2980.

San Francisco Computer Society, a CP/M and MS-DOS user group, meets on the fourth Tuesday of each month at St. Aidan's Episcopal Church, Diamond Heights Blvd. and Goldmine Drive in San Francisco, 7 pm. Membership is free, meetings are free and open to members and non-members. Member of FOG. For more information call Ralph Gallagher at (415) 929-0252 or Mark Simpson at (415) 479-6290.

Silicon Valley FOG. Supporting all types of CP/M micros. Two meetings monthly, one at the Campbell Public Library, 70 North Central Ave., Campbell, and the other at the Saratoga Community Library, 13650 Saratoga Ave., on the southeast corner of Saratoga and Fruitvale Avenues, Saratoga. Call (408) 371-8699 for further information.

NORTHSTAR

INSUA Largest North Star users group in the world. Members' newsletter and software library. Membership dues $20. Contact George Riddle, P.O. Box 2910, Fairfield, CA 94533.

OSBORNE

East Bay FOG (First Osborne Group) Osborne, Kaypro and Morrow. Meets second Wednesday of the month at B&B Electric, 2832 Ford Street, Oakland. 6 pm workshops, 7:30 pm program. For info contact 5497 Taft Ave., Oakland, CA 94518; phone (415) 272-9099.

SMOG3 Osborne User Group (Peninsula) Meets first and second Monday of every month at Crane Place, 1331 Crane, Menlo Park. Call Phil Moore at (415) 325-2442.

MTDOG (Mt. Diablo Chapter-First Osborne Group) Meetings 7 pm, 3rd Wednesday each month in Diablo Room (top floor), SF Federal Savings and Loan, 1660 Olympic Blvd. (cross-street: California), Walnut Creek. Software library, software / hardware / service demonstrations, sharing problems and solutions. For meeting info contact Larry Sydes, (415) 933-2665.

North Bay First Osborne Group. Meets first Thursday of the month at 7:30 pm, Valley Oaks Apts. Rec. Hall, 2600 Northcoast St., Santa Rosa, CA (off West Steele Lane). Call (707) 546-0145 for more information.

CP/MUSC, A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: P.O. Box 628, Ben Lomond, CA 95005, (408) 338-6365, (408) 476-0504.

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NEC

Bay Area NEC/100 Users. For NEC 8201A and TRS-80 Model 100. Meets College of Alameda, 1st and 3rd Thursdays, 7:30 pm. Contact Rachel Holmen, c/o Truly Portable, Box 2916, Oakland, CA 94609, (415) 658-1889. Call for room number, which changes occasionally.

PAPERBACK SOFTWARE

V-P Planner Special Interest Group. Meets 2830 Ninth St., Berkeley, CA, every third Thursday, 7:30 pm. Contact Lloyd W. Bracewell, 6200 Harwood Ave., Oakland, CA 94618, (415) 547-8205.

PICK

Northern California Pick Users. NCPU mails a monthly newsletter, meets on the third Tuesday of the month for a dinner meeting with Pick related program, holds Pick educational courses, and has many other member benefits. P.O. Box 884474, San Francisco, CA 94188-4474, (415) 284-4063.

PIED PIPER

Pied Piper Users Group Owners of Pied Piper CP/M based computer are invited to call or attend the PPUG. Meets last Tuesday of the month at 7:30 pm. Please call (415) 638-1146. Meeting address: 10950 Elvessa St., Oakland 94605.

R2E

North Bay R2E Forming user group for R2E System microcomputer users. Please call (415) 235-1598 for information.

RADIO SHACK TRS

TRS-80 Computer Society of Diablo Valley The purpose of this group is the sharing of information, problem solving, support group, purchasing discounts, support for professional, business and educational users of Radio Shack computers. Out-of-area members welcome. Meetings second Tuesdays of the month, Willow Creek Center, 1026 Mohr Lane, Concord, 7:30-9:30 pm. Doors open at 7. Contact Roy or Sue Copeland, P.O. Box 23438, Pleasant Hill, CA 94523, (415) 372-7003.

TRS Nybblers. MS-DOS and Tandy. Newsletter, help and education, access to all popular public libraries (PC-SIG, CompuSoft, Public Brand. Instruction and problem solving. Meetings: MS-DOS — 25555 Hesperian Blvd., Hayward, Chabot College, 8 pm 3rd Friday, Room 1564; Tandy 2nd Friday, 8 pm, Room 600). Contact B.B. Jarvis, 1975 Paseo Del Cajon, Pleasanton, CA 94566. (415) 846-3575.

Bay Area Chapter of the California Computer Federation, a user group for Color Computer users formed by The Redwood Color Board. Write the R.C.B., P.O. Box 7007, Redwood City, CA 94063 for details.

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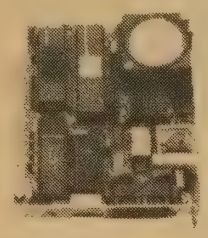

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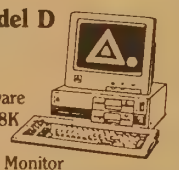

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South Bay TRS 80 Users Group (SBUG). For info write P.O. Box 60116, Sunnyvale, CA 94088 or call Don Rhodes at (408) 996-1008. BBS: (408) 253-6293. Meetings, Cupertino library, 3rd Tues., 7:15 pm.

San Mateo TRS-80 Users Group. Meets 4th Thursday of the month at Cal Fed S&L, 2600 Ocean Ave., SF., 7:30 pm. BBS (415) 574-7684, 300/1200, 8-N-1 settings. Contact Julian Kaufman, (415) 992-1783.

Bay Area NEC/100 Users. For NEC 8201A and TRS-80 Model 100. Meets College of Alameda, 1st and 3rd Thursdays, 7:30 pm. Contact Rachel Holmen, c/o Truly Portable, Box 2916, Oakland, CA 94609, (415) 658-1889. Call for room number, which changes occasionally.

Byte Bandits of America. Meets 2nd Saturdays 1 pm, 4th Wednesday 7 pm, 780 Manx Ave., Campbell, CA. Call Robert W. Brown, (408) 379-2774 for information. BBS: 300/1200. 24 hrs., free, (408) 374-3974.

Club 100. A Model 100 users Group. Dedicated to Model 100, 103, 200, NEC 8201A and Olivetti M10 users. Contact Richard Hanson, club secretary, P.O. Box 23438, Pleasant Hill, CA 94523, or call our club BBS at (415) 939-1246. We are a very active, on-line club with many helpful members, and a large Model 100 public domain library available to members.

United Computer Federation: San Francisco Chapter. Meets the fourth Tuesday of each month at the Foster City Fashion Island Mall community room. Meeting starts at 7:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy color Computer user groups. For more information phone Brad Ryan, Chapter Vice President, at (415) 469-3172.

REALWORLD

Bay Area REALWORLD Users Group meets the third Tuesday of each month. For more information contact Mitch Paioff, 5097 Tisdale Way, San Jose, CA 95130, (408) 866-4310.

ROYAL

Royal Alphatronic, San Francisco. New group forming. Call Tom Rutkowski at (415) 863-4794 for information or write P.O. Box 421161, San Francisco, CA 94142.

S-100

S-100 Bus Users Group. Meets fourth Tuesdays, 7:30 pm, Community Room, El Paseo de Saratoga, San Jose. Contact Dick Delp, Box 10404, San Jose, CA 95157, (408) 245-2137. CP/M-80, S-100 emphasis. CP/M and MS-DOS libraries.

SANYO

Sanyo MBC 1100-1150 user group now forming in Oakland. Call or write (415) 534-1981, 5885 Bancroft Ave., Oakland 94605 for meeting time and location.

Sanyo National Users Group. SNUG is a central resource for Sanyo information and public domain. Inquiries welcome! Contact John Egan, 101 Irving Ct., Pleasant Hill, (415) 827-3023.

Sanyo PC Compatible Club. SPCCC supports Sanyo 16 bit machines and similar PC clones. We publish the Sanyo PC Hackers Newsletter (International), subscription rate $20/yr., and maintain a public domain software library. Meeting at the Mercury Room of Mercury Savings & Loan, 99 El Camino Real, Menlo Park, CA, 7-9 pm the first Wednesday of the month. Contact Victor R. Frank, 12450 Skyline Blvd., Woodside, CA 94602, (415) 851-7031.

SOUTHERN PACIFIC

ICOLATUG. User group for owners of Southern Pacific Ltd's Mountainside ICO and LAT single board computers. Exchange tips and programs. Contact Andrew P. Porter, 774 Joyce St., Livermore, CA 94550.

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South Bay T.I. User Group. One general meeting per month. We have training session, library and own bulletin board (408) 578-6264. Meets first Thursday of each month at 7:00 pm, Cupertino Library, 10400 Torre Ave., Cupertino, (between DeAnza Blvd. and Rodriques Ave.) starting at 7 pm in the basement conference room. Call v.p. Keith Felix, (408) 258-6678.

Nor-Cal TI 99/4A Users Group. Learn more about your Texas Instruments 99/4A computer. Free software, sources of hardware and software. Contact Dave Steady, 324 Howard St., Petaluma 94952, (707) 762-6561. Meetings at Retail Clerks' Union Hall, 382 Tesconi Ct., Santa Rosa, CA, first Wednesday of the month at 7 pm.

Santa Clara Valley TI Pro User Group. Meetings 7 pm, 4th Thursdays, location varies. Contact Tom Schoen, PO Box 871, Newark, CA 94560, (415) 793-6670.

THEOS OASIS

Theos/Oasis Users Bay Area Group. Greater SF Bay Area users of THEOS and OASIS multi-user operating systems meet quarterly to focus on "hot" issues and share info. Contact Joe Trimble, 236 Frisbie St., Oakland, CA 94611, (415) 839-3281.

TIMEX/SINCLAIR

East Bay Timex/Sinclair User Group (EBZUG) Timex/Sinclair user group. S/W library and newsletter. Meets at West Branch of Berkeley Public Library at corner of University and San Pablo. Usually meets 4th Thursday of the month at 7:30 pm. CALL FIRST. Contact Russ English, 415/465-3116 or write to Woody McPheeters at 3120 King St., Berkeley, CA 94703.

Peninsula Timex/Sinclair User Group (PUG) Timex/Sinclair user group. S/W library and newsletter. Meets at Peninsula Hospital, 1783 El Camino, Burlingame. Meets 3rd Sunday of the month at 1 pm. Contact George Mockridge, 311 Michelle Lane, Daly City, CA 94015, (415) 878-1773

Silicon Valley Timex/Sinclair User Group (SVTSUG) Timex/Sinclair user group: 6675 Clifford Drive, Cupertino, CA 95014-4530. Bill Miller (408) 253-3175. SW library and newsletter. Meets at Cupertino Library, 10400 Torre Ave., Cupertino, CA, last Tuesday of the month.

UNIX

The Unix C-Club Seminars, public domain softwares, information exchange, Unix hardwares and softwares. Discount on purchases. Meets 2nd Saturday of each month at 10 am. Call Gilbert B. Dalit at (415) 348-6723 or (408) 238-5587 for more information, or write: 122 2nd Ave., Suite 214, San Mateo, CA 94401.

VECTOR

Bay Area Vector Group Meeting held regularly. Please call to be put on mailing list. You will be informed of next meeting! Contact Peter Tjeerdsma, 764 Cole St. #4, San Francisco, CA 94117. Phone (415) 681-0308.

VICTOR

Victor® Group is the San Francisco Bay Area Victor User's Group. We have three chapters East Bay, South Bay, and San Francisco. Members can attend meetings at any of the chapters or all of them. The more the merrier. Dues are $30 a year, which includes a subscription to VictorTalk, membership in a Victor-exclusive discount buying cooperative, and the right to buy from our public domain library at a discount. South Bay meetings are held the first Thursday of each month at Computer Insights, 40957 Grimmer Blvd., Fremont at 7:30 pm. Contact John Kimber (415) 797-6423. East Bay meetings are held the second Wednesday of the month at 7:30 pm; contact Boardman Moore (415) 283-3285 for location and further info. San Francisco meetings are held the third Sunday of the month at 5 pm at Homestead Savings, 130 West Portal, San Francisco. Contact Joe Zmuda, (415) 584-4048.

VTC-1050

VTC-1050 User's Group. Establishing a VTC-1050 User's group and newsletter. Interested parties please call or write Ken Phillips, 4349 Blackford Ave. #1, San Jose, CA 95129, (408) 973-1353.

WORD PERFECT

Word Perfect of Santa Cruz. Now a SIG of Santa Cruz Computer Society. Telephone network, meetings occasionally as needed. 2120-87 N. Pacific, Santa Cruz, CA 95960-2743. Contact Sylvia Caras, (408) 426-7636.

South Bay Word Perfect User Group. Call Martin Van Derpool, (408)238-8434 for information.

ZENITH

Zenith User Group of San Francisco. Zenith users are forming a user group and bulletin board for Zenith computers. Hands on demonstrations will be provided on the full line of Zenith hardware. Meetings at 1325 Howard St., SF, CA. Contact Stan Kelley, 415-861-3068.

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NBHZUG North Bay Heath/Zenith Users Group. Devoted to Heath/Zenith computers in specific and MS-DOS, CP/M computers in general. Beginners and advanced. Meeting place varies, time 2nd Saturday, noon. Contact Martin Schaaf, (415) 454-6761 for information.

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NEXT ISSUE

In next month's issue we'll examine some of the problems and solutions relating to connectivity—linking dissimilar operating systems, different machine types and the like. Our cover story will look at AST Research, currently producing connectivity tools from micro-to-mainframe links to 8086 and 80286 boards for Apple's new Macintosh machines. Come with us as we examine the continuing effort to link everything with everything else.

Also next issue, we'll premiere a special quarterly section called "Mac At Work," in which we examine products and solutions using the Macintosh in business environments. This issue's emphasis will be on the current generation of word processors for the Mac, looking at the advantages of different packages for particular situations.

We'll also look at MicroPro's recent decision to offer a CP/M version of *Wordstar 40*, and offer a spectrum of opinion on the future of CP/M as a viable operating system.

This, plus our regular columns, features and reviews, awaits you in the May issue of *MicroTimes*, available April 17.

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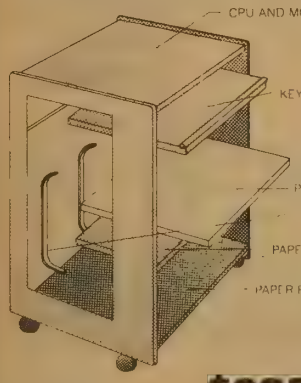

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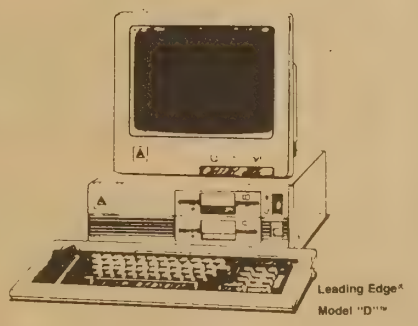

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